**ENVIRONMENTAL PERFORMANCE INFORMATION AND SHARE PRICE BEHAVIOUR: EMPIRICAL EVIDENCE FROM THE UK FTSE 100**

**Abstract**

*This study set out to investigate the incremental relevance of environmental performance to financial accounting variables of FTSE 100 companies during the period 2009 to 2013. Drawing on value relevance literature of financial and non-financial information, the study established a link between financial variables (book value and earnings) and proxy for non-financial information (environmental performance) to explain variations in share prices.**The research follows a quantitative method and it uses a sample of 94 companies over five years. The data was analysed using multiple regression analysis based on Olhson (1995) valuation model. The test of association and incremental relevance of environmental performance to share prices were statistically insignificant. The study captures cross sectional differences in industry type and found significant results that there are unexplained differences between industries within the model. Though Companies are obliged to display Environmental accountability as enforced through regulations and sanctions, the conclusion of this study is that environmental performance information is not relevant to investors in estimating share price and better environmental performance and the disclosure of such activities does not improve share price performance.*

**Key words: Environmental performance, Environmental Information, Environmental Accountability, Share prices, Financial performance**

# 1.0 Introduction

The global economy is characterised with ever increasing environmental accountability that impacts firm profitability and Value. Companies in the UK have embraced corporate environmental performance has a crucial component of their activities and an important tool for improving their reputation with stakeholders. Corporate environmental reporting includes companies’ environmental activities and the public disclosure of such activities. From a financial stand point the empirical question that emerges are; does the market value environmental performance? Is the financial market interested in social and environmental disclosures (Konar & Cohen, 2001)? The research into value relevance of environmental performance originates from the proposition that non-financial information can highly impact firm value. Information about the environmental performance of the company can affect share price; the existence of such association is consistent with the view that financial markets may provide strong motivation for firms to change their environmental behaviour (Konar & Cohen, 2001).

The stem of accounting literature that analytically evaluated the value relevance of non-financial information was triggered by Amir & Lev (1996); using the Ohlson (1995) valuation model they concluded that non-financial information is relevant singularly and incremental to financial information in science based technology firms. Following a similar pattern other researchers (Trueman, Wang, & Zhang, 2000; Riley, Pearson, & Trompeter, 2003; Yang, 2007) support this view as they found non-financial information are value relevant; though they point out that the relevance of nonfinancial information depends on the industry. Environmental performance has been used as a proxy for other value-relevant information in valuation models with studies conducted in US and Europe (Hughes, 2000; Hassel et al., 2005; Moneva & Cuellar 2009, Semenova et al., 2010). Investigating the relationship between environmental performance and financial performance can be approached through an association study over time or an event study examining the effect of new environmental information (Konar & Cohen, 2001). Event studies have shown that the market reacts to new environmental information (Klassen & McLaughlin, 1996; Lorraine, Collison & Power, 2004; Jacobs, Singhal & Subramanian, 2010) but association studies show a longer term impact of environmental performance in the market. Previous research testing the relationship between environmental performance and stock price returns showed mixed results with wide variety of research design, approach and lack of an objective environmental yardstick (Konar & Cohen, 2001; Lorraine et al., 2004).

The majority research carried out in the UK has particular focused on environmental reporting and disclosure policies of firms (Campbell, 2004); others that have studied environmental performance follow the event study approach (Lorraine et al., 2004). In other European countries there are studies that have employed the longitudinal approach (association study) to investigate environmental performance (Hassel et al., 2005; Moneva & Cuellar, 2009; Semenova et al., 2010). The research proposes to critically evaluate the relevance of environmental performance on share market prices in the UK from a more recent context using a longitudinal approach. There are costs and benefits involved when firm pursue environmental accountability, it is still relatively unclear if the relationship is causal. There is a need to investigate the consequences of proactive environmental strategy which will provide further evidence to the ongoing debate on its benefits.

**1.1 Objectives of the Study**

The aim of this research is to analyse the incremental value relevance of environmental performance to financial accounting variables of the top 100 companies on the London stock exchange. From the broad aim explained above the following fundamental objectives have been enumerated;

1. To analyse the incremental relevance of environmental performance information to share prices.
2. To evaluate the usefulness of environmental performance information to investors in estimating firm value.
3. To determine if high environmental performance is associated with improved financial performance in terms of share prices.

## 1.2 Research Hypotheses

The proposition of this research is that the explanatory power of accounting valuation model increases when financial information is complemented appropriate non-financial information (Amir & Lev, 1996). The second hypothesis is created to investigate this proposition.

H10: There is no association between environmental performance and share prices

There are contradictory view on the nature of the association between environmental performance and financial performance as measured by the share price. The objective of the third hypothesis is to test if high environmental performance is associated with improved financial performance in terms of share prices.

 H20: There is no positive association between environmental performance and share price

**2.0 Literature review**

In response to greater demand for environmental responsibility and accountability of businesses, many companies have begun to report their ‘green’ activities and environmental performance either through annual reports or stand-alone environmental reports (Holland and Foo, 2003). The framework for environmental performance reporting can be categorised into mandatory and voluntary. Mandatory environmental disclosures represent the requirements and regulations placed on companies by the governments or other regulatory agents. Alongside their mandatory and voluntary financial disclosures, a large number of companies willingly divulge information concerning their environmental activities (Ullmann, 1985; Gray, Kouhy & Lavers, 1995; Patten, 2002). Voluntary disclosure represents an over-compliance movement usually driven by management’s strategy. A review of regulations in the UK shows that legislature has changed significantly from the former voluntary approach. It seems that disclosure is driven by management and reporting initiatives notwithstanding the increased environmental legislation; this proactive response increases voluntary disclosure but it does not create comparability or reliability (Holland and Foo, 2003). If concern about environmental degradation is important environmental reporting under a largely voluntary regime is not adequate (Freedman & Patten, 2004). Beisland (2009) points out that disclosure does not have to be mandatory in order to have value relevance effects. Thus, the voluntary information disclosed by companies are useful are relevant to investors and stakeholders.

The determinants of environmental strategy and disclosures include both internal factors (within the firm) and external factors (outside the firm). Several researchers have shown that voluntary disclosure to be importantly and systematically determined by a variety of firm and industry characteristics that influence the relative costs and benefits of disclosing such information (Patten, 2002; Cormier & Magnan, 2003). Larger firms and sensitive industries such as oil and gas, chemicals, forest and paper products or utilities tend to have higher disclosures (Neu, Warsame & Pedwell, 1998; Campbell, 2004). Corporate characteristics such as firm’s size, nature of business activities, ownership structure and financial structure (leverage) of a firm also influence its disclosure strategy (Dopoers, 2000; Brammer and Pavelin, 2008). The extent of the firm’s media exposure on environmental activities creates external pressure from legislators, regulators, community and environmental lobby groups, customers and socially responsible investors which heavily influence the willingness to voluntary disclose environmental information (Neu et al., 1998; Cormier & Magnan, 2003; Aerts et al., 2008). Overall, it is opined that the environmental reporting strategy is determined by weighing the benefits from a reduction in information asymmetry and costs of information disclosure.

There are opposing views on the relationship between environmental disclosures and performance. Voluntary disclosure theory (Dye, 1985; Verrecchia, 1983) argues that better environmental performers will communicate with stakeholders using hard or verifiable disclosures which are difficult to mimic by poor environmental performers as signals of management competence and practices. Clarkson, Li, Richardson & Vasvari (2008), Al-Tuwaijri et al., (2004) found results suggesting a positive relationship between environmental disclosure and good environmental performance. The findings of Socio-political theories including stakeholder theory, legitimacy theory and political economy theory (Patten, 2002; Cho & patten, 2007; Gray et al., 1995; Clarkson, Overell & Chapple, 2011)) on the other hand, predict a negative association between environmental performance and the level of discretionary environmental disclosures. Because voluntary social and environmental disclosures are diverse in their extent and content they have limited usefulness in measuring environmental/social performance (Barth & McNichols, 1994; Clarkson et al., 2008). This does not mean that they have no relationship at all, but the interaction between environmental disclosures and environmental performance is not easily determined.

The financial consequences of environmental activities of companies must increase with environmental concerns. These consequences can be cost saving, cost or liability avoidance, income generating or signals of best-in-class management practices. Brammer and Pavelin (2008) opines that voluntary environmental disclosures constitutes an attempt by firms to reduce the information risks (and their associated costs) faced by potential and actual investors to lessen the potential financial consequences of non-disclosure. Neu et al. (1998) found that companies provide environmental reports as a means to manage external perception. This evidence is consistent with the notion that discretionary disclosure reduces asymmetrical information costs and creates a favourable investor preference effect and reduces an investor’s risk concerns. Managers make voluntary disclosures to reduce information risk and boost stock price but at the same time, try to avoid setting disclosure standards that will be difficult to maintain in practice (Graham, Harvey and Ragjapol, 2005).

Depoers (2000) explains that the model hypotheses explaining voluntary disclosure is defined as the interaction of contradictory forces: inducements to reduce information asymmetry and limitations imposed by information costs. The other end of the argument about voluntary disclosures is that ot can lead to lower market value and higher capital costs. This is because disclosure is costly in two respects: the costs of measuring, verifying, collating and publishing environmental information; the loss of strategic discretion associated with making public commitments to verifiable future actions and/or performance (Verrecchia, 1983; Cormier and Magnan, 2003). Decisions on voluntary disclosure can only be justified from an economic standpoint if the gains received outweigh the costs to the firm. However, not all firms choose to make such disclosures, and those disclosures that are made are of varying quality (Brammer & Pavelin, 2008). According to Clarkson, Li, Richardson and Vasvari (2011) the cost/benefits framework predicts firms that pursue such proactive environmental strategy have more to gain.

## 2.1 Relevance of Environmental Performance to Share price behaviour

Previous research testing the relationship between environmental performance and financial performance using stock price returns showed mixed results using different research methodologies (Konar & Cohen, 2001; Lorraine et al., 2004; Moneva & Cuellar, 2009). Research on the relevance of environmental performance information and can be conducted through an event study or an association study over time (Konar and Cohen, 2001). Event studies estimate market value impacts using announcements of environmental events. A statistically significant market reaction to announcements of environmental events would indicate a causal link. By isolating a single environmental event within a narrow time frame, event studies control for important differences among firms that cannot be observed (King & Lenox, 2001).

Belkaoui (1976) and Blanconniere & Patten (1994) using the event study approach found that the market reacts differently to firms that disclose pollution control information than to those that did not. Klassen & McLaughlin (1996) and Jacobs et al. (2010) also studied the effect of published reports of events and awards on firm valuation and found a relationship between the occurrence of the event (positive or negative) and the resulting change in market valuation. Klassen and McLaughlin (1996) in particular deduced that investors reward positive environmental events and penalize firms with negative environmental events. In the UK, Lorraine et al. (2004) also found that share prices respond to good/bad environmental performance information. In addition they found that the share price response is a function of the type of fine imposed on the company; explanatory variables such as environmental performance news or sector membership were not significant in explaining variations in the market reactions. The limitation of event studies is that oftentimes they consider the effect of events that are only partially environmental in nature; they provide a narrow view on the market impact of environmental performance.

Association studies follow a longitudinal approach in establishing the relationship between environmental performance information and variations in share price. Hughes (2000) found significant association between nonfinancial pollution proxy and share prices in high-polluting electric utility industry. The study documents cross sectional variation among firms affected by environmental regulation and differences across time in value relevance of pollution measures. Clarkson et al. (2004) provides evidence that there are incremental economic benefits associated with environmental capital expenditure investment by low-polluting firms but not high-polluting firms. They both also find that investors use environmental performance information to assess unbooked environmental liabilities.

Murray et al., (2006) tests the relationship between social and environmental performance disclosures and financial market performance in the UK and found no direct relationship between share returns and disclosure. They particularly show that the combination of financial reporting with non-financial environmental measures does not improve the explanatory power of stock prices. Evidences from Spain by Moneva & Cuellar (2009) suggest that non-financial environmental performance disclosures are not value relevant, but financial environmental performance disclosures are. They provide a clear separation of environmental performance measures and their results indicate that investors are able to make a distinction between the measures they find useful and measures that are irrelevant. For Swedish listed companies both Hassel et al., (2005) and Semenova et al., (2010) found evidence that environmental performance information has value relevance and can affect the expected future earnings. They provided evidence that the incremental explanatory power of valuation model increases with the inclusion of environmental performance variable. In the recent study of Clarkson et al. (2013) evidence were provided that indicated that voluntary environmental performance disclosures provide incremental valuation relevant information; the results point to a signalling role for such disclosures and financial performance prediction as the means by which voluntary environmental disclosures enhance firm value. When considering the findings of research on the relevance of environmental performance disclosures caution should be shown in interpreting results of studies in this area. Management has motivations to distort voluntary disclosures to reflect aspects of managements' relative performances. In this respect third party information are more useful and relevant as present in the studies of Hassel et al., (2005).

It possible for environmental performance to be useful in explaining stock price variation but not be associated with improved financial performance; the complex nature of the link between environmental and financial performance is evident as empirical findings have been inconclusive and even conflicting. The value creation school view environmental performance as a way to increase competitive advantage and improve financial returns to the investors while the cost-concerned school argues that environmental investments and high environmental performance represent only increased costs, resulting in decreased earnings and lower market values (Hassel et al., 2005). According to the cost concerned school the relationship between environmental performance and market value of a firm is expected to be negative (Jaggi and Freedman 1992). Findings of Hassel et al., (2005) supports this view as they show significant results that environmental performance is negatively associated with the market value of firms. Proponents of the value creation school posit a positive relationship between environmental performance and market value (Hart & Ahuja, 1996; Konar & Cohen 2000; King & Lenox, 2001; Al-tuwairjri et al., 2004). Clarkson et al. (2013) also found that a proactive environmental strategy and the signalling of such a strategy to investors can enhance a firm’s stock price. Clarkson et al. (2011) obtained results which are consistent with predictions of the value creation school and indicate that although becoming ‘‘green” is associated with improvement in firm performance although this strategy cannot be easily mimicked by all firms.

# Research Methodology

* 1. **Population and Sample of the Study**

The Population of the study is the firms listed on the London Stock exchange. The sample is selected using the FTSE 100 index as criteria for being in the sample. The sample size was reduced to 94 companies due to missing data in some of the years considered. The companies that were excluded did not have the required data because they became a part of this elite group after the start date of the study; They include Coca-cola HBS, Direct line group, Glencore plc, International consolidated airlines group, Royal mail plc and TUI travel plc. Consisting of 94 companies over a period of 5 years the panel data is 470 observations. The list of companies in the sample is shown below:

Table 1: List of companies in the sample



Source: FAME database

Data about earnings, book value and share prices of the companies will be obtained from databases such as DataStream and annual reports of companies in the sample. Datastream is provided by Thomson Reuters and contains a huge range of global financial and economic data in over 175 countries and 60 markets. The environmental performance data from is obtained from Asset4 ESG (environmental, social and governance) index on DataStream. The environmental score of companies is produced each year as measured in percentage. To overcome the limitations of previous research and maintain objectivity, similar to Hassel et al. (2005) this study uses environmental performance ratings produced externally to provide a multi-dimensional view on the performance of companies. The Asset4 index includes all the FTSE100 companies covering several sectors.

* 1. **Method of Data analysis**

This research is a panel study because it collects dataset of the sample observed across time. It uses a panel of companies providing a longitudinal or cross-sectional time-series data. The panel for the study is 470 observations (94 companies over 5 years). The panel data can be analysed through fixed or random effects. The unobserved heterogeneity is a parameter to be estimated in the fixed effects model; contrarily, the random effects model includes unobserved heterogeneity in the error term, *eit*, (Semenova et al., 2010). The unobserved fixed industry effects can be estimated in the random model by including the industry dummies variables (Hirschey, Richardson & Scholtz, 2001).

Studies testing the association between financial and non-financial variables and market value and are treated using regression analysis (Beisland, 2009).The Ohlson residual incomevaluation and information dynamics model represents a framework for applying regression analysis. This model is the prevalent approach used to examinethe value relevance of various non-financial variables in market-based accounting research(Amir and Lev, 1996; Trueman et al., 2001; Riley et al., 2003; Hassel et al., 2005). In regression analysis, the coefficient of determination (known also as the explanatory power or simply R2) measures the proportion of variance in the dependent variable explained by the independent variable(s) (Biesland, 2009). In this case the dependent variable is share market price while the independent variables are book value per share, earnings per share and Environmental performance ratings of companies in the sample.

* 1. **Model specification**

To apply multiple linear regressions an appropriate valuation model must be defined. For the purpose of this research the share market price is expressed as a function of accounting information and environmental performance. The accounting valuation model developed by Ohlson (1995) is used which represents firm value as a linear function of book value of equity and the present value of expected future earnings. The Ohlson model (1995) is based upon the hypothesisthat the market expectations of future cash flows are reflected in current earnings, bookvalue of equity, and other non-accounting value-relevant information (Semenova et al., 2010). The originally derived model of Olshon (1995) is;

MVt = BVt + α1AEt + α2vt.........................................................................(1)

Where: where MVt is market value of equity at time t, BVt is the book value of equity at the end of the year t, AEt is defined as abnormal earnings for period t, and vt represents other value-relevant information. This model stresses the inclusion of financial and non-financial model for firm valuation; the valuation model permits the inclusion of environmental performance a proxy for variable vt. For this study the following regression model is proposed;

MP*i*,t = β0 + β1BVS*i*, t + β2EPS*i*, t + β3ENVS*i,t* + ε*i,…*............................................(2)

Where *MPi,t* is the company’s stock market price at time *t*. *BVi,t* is the book value per share at the end of the period *t*. The earnings per share for period *t* is EPS*i,t*. The proxy for environmental performance for the company at time *t* is *ENVSi,t*and ε is the Error term of residuals. A company is denoted by *i*, i.e. a cross-section observation (*i* = 1...94companies), and *t* indicates time periods for each cross-section observation (2009 -2013). β1, β2 and β3 are the coefficients of the independent variables (BVS, EPS, ENVS). The study captures unobserved fixed effects in the model by introducing dummy variable that accounts for cross-sectional variations. The dummy variable I represents the type of industry and its interaction with environmental performance information.

MP*i*,t = β0 + β1BVS*i*, t + β2EPS*i*, t + β3ENVS*i,t* + β4I*i,t +*+ β5(I*i,t* ENVS*i,t*) *+*ε*i,t*...........(3)

The sample is divided into two categories; manufacturing or service industry to represent the variable I. I is 1 for manufacturing companies and 0 for companies in the service industry. If R2 is closer to one signifies the proportion of variation in the dependent variable that is explained by the independent variable which is a test of H10. The coefficients of dummy variables explain unobserved cross sectional differences that are relevant to the explanatory model.In terms of this model, a test of H20 is carried out by observing if the coefficient β3 is significantly different zero. The coefficients β1 and β2 are expected to be significantly different from 0 indicating value relevance of BVS and EPS.

# 4.0 Research results and Discussion of Findings

The yearly average environmental performance of the sample has remained relatively unchanged which strengthens the point that such ratings does not change significantly over long period.

Figure 2: environmental performance score trend

From the figure above, this trend for the sampled group could signify that the prevailing environmental legislation over the period has placed these companies in the lime light and they are aware of maintain high environmental performance standards. It is quite obvious companies are more cognizant with the way that environmental legislation creates environmental cost and concerns for the operation and activities of the organisation. However the analysis of Holland and Foo (2003) still found that disclosure is driven by management and reporting policy; therefore this proactive environmental performance strategy does not create comparability or reliability of environmental performance information among companies and industries. This section highlights the opinion of Campbell (2004) that Cross-sectional effects will be observable with those companies or sectors more likely to be affected by environmental performance category disclosing more information relevant to the area of concern than those less affected. The result is presented in table 1 below:

Table 1: Frequency distribution of mean environmental performance score

|  |  |
| --- | --- |
| Labels | Number of companies |
| 0-29 | 2 |
| 30-39 | 2 |
| 40-49 | 2 |
| 50-59 | 7 |
| 60-69 | 10 |
| 70-79 | 14 |
| 80-89 | 31 |
| 90-99 | 26 |
| **Total**  | **94** |

Table 1 above shows that most of the FTSE 100 companies in the sample are good environmental performer, 84% of the companies have environmental performance score of above 60. The cross sectional mean placed most of the companies as high rated environmental performers; it stresses the point that environmental performance is driven by potential cost and benefits. These firms have more to gain and lose if they are to reap the consequences of their environmental activities. From examining the longitudinal and cross sectional trend in environmental performance, companies seem to maintain a particular standard of environmental performance which can be related to environmental regulations over the period. The longitudinal analysis links the findings to the determinants of disclosing environmental performance information and the cost/benefit framework of environmental performance.

## 4.1 Descriptive statistics and correlations

Table 2 below provides descriptive statistics on the dependent and independent variables in the study. Over 470 observations the mean, standard deviation, minimum and maximum values of the variables share market Price, book value per share (BVS), Earnings per share (EPS) and Environmental performance score (ENVS) are shown.

Table 2: Descriptive statistics

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | N | Mean | Median | Std. Deviation | Minimum | Maximum |
| MP | 470 | 9.686 | 6.288 | 9.531 | 0.139 | 71.650 |
| BVS | 470 | 4.239 | 3.038 | 4.066 | -0.342 | 19.538 |
| EPS | 470 | 0.568 | 0.433 | 0.996 | -9.349 | 4.794 |
| ENVS | 470 | 78.768 | 85.315 | 17.221 | 19.620 | 94.680 |
| Valid N | 470 |  |  |  |  |  |

For the sample firms over the 5 year period, the mean share market price is more than twice the book value per share. The large difference between share price and book value indicates that investors have better expectation about the future earnings of the companies in the sample. Share price show a larger dispersion compared to book value per share. Some of the companies in the sample posts negative book value per share and earnings per share during the years considered; the negative earnings per share were mostly seen among companies in the financial sector. The standard deviation of ENVS is largest among the variables in the model showing a larger spread in the observed values; thus, there are more high environmental performers than low performers.

Table 3: Pearson Correlation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | MP | BVS | EPS | ENVSCORE |
| MP | 1.000 | .661 | .552 | .120 |
| BVS | .661 | 1.000 | .356 | .226 |
| EPS | .552 | .356 | 1.000 | .086 |
| ENVS | .120 | .226 | .086 | 1.000 |

Table 3 provides the correlation coefficients between the explanatory variables in the model. The statistics shows a positive correlation among all the variables. For the dependent variable share price; book value per share and earnings per share have the high positive correlation .The financial variables book value per share and earnings per share are also significantly positive correlated. The variable Environmental performance is positively associated with the other variables in the model; however it has the highest correlation with book value per share.

## Test of hypothesis one

This study proposes that market value should reflect both the financial and environmental performance of companies in the sample. This hypothesis represents the core of this study, which tests the association between environmental performance and market price. The regression model after including environmental performance score as a third independent variable is given as;

 MP*i*,t = β0 + β1BVS*i*, t + β2EPS*i*, t + β3ENVS*i,t* + ε*i, t* ...............................................(2)

The fourth model which estimates the unobserved industry characteristics with the inclusion of dummy variable I is expressed below;

 MP*i*,t = β0 + β1BVS*i*, t + β2EPS*i*, t + β3ENVS*i,t* + β4I*i,t +* β5(I*i,t* ENVS*i,t*) *+*ε*i,t*...............(3)

Table 4: Panel data regression results 

P >0.05, \* signifies P>0.10, the t-statistic is one-tailed

The result of the regression for model 3 provides the explanatory equation expressed below;

MP*i*,t = 3.819 + 1.265BVS*i*, t + 3.471EPS*i*, t - 0.019ENVS*i,t*

The intercept and the coefficients of the independent variables have increased marginally compared to the first regression model. But most importantly it can be seen that from the p value on 95% confidence interval that all the variables in the regression contribute to the model except the ENVS. Therefore, the Null Hypothesis has to be accepted. This means that the ENVS is not relevant to the explanatory model for the dependent variable market price. The addition of ENVS variable does not to affect the adjusted R2 and all coefficient estimates are statistically significant except for ENVS Therefore, the finding indicates that the environmental performance measure does not contain information that is value-relevant to investors as proposed in the study. The deduction from the statistical analysis is that the market and investors does not value environmental performance information in estimating share price of companies.

Most importantly EPS has the highest coefficient of 3.469 which depicts a high association between the independent variable EPS and the dependent variable MP. Both accounting variable used in the study are highly associated with the share market price of the companies in the sample. At 5% confidence level the p-value from the results of the regression shows that the findings are statistically significant. Therefore, we reject the null hypothesis. It can be further explained that the variables BVS and EPS are value relevant and investor find them useful when estimating the share price of the firm.

Table 4 above summarises the explanatory power as measured by R2 of the regression model 1. The inclusion of EPS in the model the estimation of R, R2 and adjusted R2 has increased significantly. The proportion of variance in the dependent variable (Share Price) which can be explained by the independent variables (BVS and EPS) is 52.2% according to R2. This outcome is consistent with the pioneering work of Ball and Brown (1968) and Beaver (1968) that accounting numbers are value relevant. However, Amir and Lev (1996) which constitutes the foundation for this study found contrary results that accounting variables (earnings, book value and cash flow) are irrelevant to investors in estimating market value except with the inclusion of specific non-financial information.

For the third model the explanatory equation is;

MP*i*,t = 2.039 + 1.208BVS*i*, t + 3.295EPS*i*, t - 0.14ENVS*i,t* + 5.483I*i,t +* 0.025(I*i,t*ENVS*i,t*) *+*ε*i,t……………*……(4)

The relevance of non-financial information is related to company specific factors thus the inclusion of industry dummy variable Ii,t,. The coefficient for variable Ii,t, is not significant at P > 0.05 but it is significant at P>0.10. Based on the former the results show that there are no unexplained systematic variation between the two industry classifications; However, the latter (p > 0.10) would show that there are unobserved differences in the two industry classifications. At P > 0.10 the coefficient of Ii,t is 5.483 which is significantly positive. The coefficient for interaction, Ii,tEPi,t, is negative but insignificant at 5% and 10% level of significance. The increases in R2 and adjusted R2 shows that the Industry variables Ii,t and Ii,tEPi,t are relevant to our model.

Our results disputes the claims of Barth and McNichols (1994) and Hughes (2000) that non-financial indicators of environmental performance have an unbooked-liability component that is assessed by the capital market. Hughes (2000) found significant association between nonfinancial pollution proxy and share prices in high-polluting electric utility industry. Similar to Hughes (2002) this study also found the presence of cross sectional variation in environmental performance. Both Hughes (2000) and Clarkson et al. (2004) ascertain that investors use environmental performance information to assess unbooked environmental liabilities. The result presented has not been able to statistically prove this notion.

Another UK study by Murray et al. (2006) came to a similar conclusion that there is no direct relationship between share returns and environmental and social performance disclosures. It may appear that the case for UK companies the combination of financial information with non-financial environmental measures does not improve the explanatory power of stock prices because environmental performance is largely voluntary investors can overlook its importance. Simpson (2010) argued that because the disclosure of nonfinancial information is discretionary, managers could strategically reveal information which potentially undermines its usefulness to investors and analysts. This ultimately aggregates the outcome of the analysed data; investors disregard the relevance of environmental performance information to share price valuation for the UK FTSE 100 companies.

## Test of Hypothesis Two

The second hypothesis of this study tests the empirical question concerning the nature of the relationship (positive or negative) between environmental performance and share price. The results shown in table 4 were statistically insignificant and the coefficients of ENVS were negative. This suggests that environmental performance doesn’t improve financial performance; therefore the null hypothesis is accepted. A negative coefficient is consistent with the view of the cost-concerned school that high levels of environmental performance are costly and will have a negative impact on the expected earnings and market values (Jaggi and Freedman 1992). Following a similar format the findings of Hassel et al. (2005) supports for the cost-concerned as their shows that environmental performance has a negative influence on the market value of firms. Clarkson et al. (2013) highlights a crucial point that although becoming ‘‘green” can be associated with improvement in firm performance cannot be easily imitated by all firms. From this view, the study resolves that though there can be benefits associated with good environmental performance, these benefits in terms of share price are not collectively reflective for the firms in the sample

**5.0 Conclusion and Policy implications of findings**

The empirical results shows that environmental performance is not value relevant neither does it have a positive association with financial performance as measured by the share price in the case of the UK FTSE 100 companies. It negates the acclaimed views presented in the literature that non-financial information (which includes environmental performance) is valued by investors. From the first hypothesis the outcome indicates that environmental performance has no incremental relevance above the information given by key financial variables book value per share and earnings per share. Noteworthy is the findings that unobserved industry specific variations are significantly relevant in the explanatory model. Except investors are interested in environmentally responsible investments and general sustainability concerns; environmental performance information is not useful beyond what is required by legislation. Despite 84% of the companies in the sample having high environmental performance, the market does not seem to value the environmental performance of the companies.

The results favours the argument that environmental performance represents an increase in cost and a waste of resources as this is not the central goal of the organisation. The negative relationship between environmental performance and the market share price indicates that firms with high environmental performance scores, ceteris paribus, do not have higher share values

The policy implication of this research is that companies need to continue to improve corporate financial performance as measured by the variables BVS and EPS to improve share price performance. Book value per share has a positive relationship with the market price; it is beneficial that companies increase their net worth as it sends positive signals to investors for share market price to increase accordingly. From the regression results the most prominent variable that firms should focus on is the earnings per share. It is the component that represents the level of profitability form the shareholders’ perspective therefore it remains a strong push for improvement in share market price. Investors are the primary effectors of share price increases as they make capital gains from increase in market share price and losses if the prices are falling. The negative relationship between environmental performances represents the view that expenditure on environmental activities is a waste of resources with no direct benefit on financial performance. Companies should still comply with environmental regulations because it has an indirect effect on the companies’ operations and financial performance. Companies should evaluate their environmental strategy to ensure that they are not making more losses than gains when it comes to commitment to environmental performance. Ultimately, companies must ensure that the share prices are monitored as it reflects the value of the firm, satisfaction of investors and chances of raising capital in the future.

The study recommends that a unified system with consistent and reliable measures of corporate environmental performance be created. This will enable users (Stakeholders) of such information particularly investors make well informed decisions. Also, the environmental performance data become more reliable and studies conducted in this research area become easier in terms of measuring environmental performance. The study envisages that the attention on environmental issues will continually increase, and new developments in non-financial accountability studies will expand available data and improve the nature of the research on environmental performance.

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