

## An Empirical Analysis of Boardroom Diversity on Firm Performance

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**Abstract:** This paper analyses the effect of boardroom diversity on firm performance in terms of Return on Assets and Return on Capital Employed. More specifically, this paper focuses on three dimensions of board diversity: 1) gender diversity, 2) age of the board members, and 3) share of independent directors and executives. By doing this, we try to investigate whether diversity within the board members brings out any positive influence on the financial performance. The results show that gender and age have no significant effect on firm performance, whereas, increasing shares of independent directors and executives have a positive influence on firm performance. On the other hand, CEO duality and audit process reduce the financial performance of firms. From the policy point of view, higher share of independent directors on the board may significantly improve the financial performance of a firm.

**Keywords:** Directors; Firm performance; Gender diversity; Public listed companies

**JEL Classification:** G30, G34, J16

### 1. Introduction

Is there any link between boardroom diversity and performance of the firm? This questions has been discussed and empirically analysis in this study. Available literature has discussed this issue partially. For instance, good corporate governance may be used as a signal for enhancing firm reputation and attractiveness (Certo, 2003). A report by Mercer Investment Consulting revealed that 46% of institutional investors bear in mind the corporate governance of the particular firm before investing whereas a report by McKinsey states that institutional investors may reward well governed companies with a premium of about 12-14% while investing (Fombrun & Pan, 2006). Fama and Jensen (1983) go on about describing the board of directors as the heart of corporate governance because of their responsibility towards the monitoring and controlling of their firms. It is based on their involvement on firm activities and ability to take decisions that determines the future of the firm (di Donato & Fiori, 2012) and shareholder value creation (Al-Musali & Ismail,

2014). However, the actions and decisions that the board undertakes are restricted by laws and regulations and the shareholders as well (Cadbury, 1992). From this debate, it can be easily said that for the success of the firm, the effectiveness of the board of directors is very essential.

The effectiveness of the board members is determined by different factors as suggested by Campbell, *et al* 2008. The qualifications, experiences, the number of multiple directorships and the amount of share ownership are likely to affect the outcomes of the firm activities. The Cadbury (1992) Report suggests to have at least 3 non-executive directors on the board whereas Hampel (1998) and Tyson (2003) recommend that a minimum of 50% of the board should be independent. Finally, the Council (2012) UK Corporate Governance Code, and the Tyson (2003) Report also voice out their concerns for more diversity especially in terms of gender. Although diversity within the board room has been a topic of debate for long now but there is no mutually agreement on the definition of it (Rose, 2007). As per Walt and Ingley (2003) opinion, diversity is a concept that has several aspects which is a combination of different attributes, various experiences, expertise and characteristics that board members contribute towards the board.

In this study, we particularly focus on three dimensions of board diversity: 1) gender diversity, 2) age of the board members and 3) share of independent directors and executives. By diversity we mean, how heterogeneous are the members of a board in terms of gender, age and independence of the executives. More specifically, we try to investigate whether diversity within the board members brings out any positive influence on the financial performance. In order to measure the financial performance of a firm, we used Return on Assets (ROA) and Return on Capital Employed (ROCE). Moreover, several independent variables were used to define boardroom diversity while controlling for firm size and other characteristics of the firm. The financial ratios and data about the board of directors are drawn from the annual reports of 2013 for a sample of 154 companies in the FTSE 350 listed on the London Stock Exchange. A multiple regression model is used to analyse the nature of relationship between firm financial performance and board diversity.

Our findings reveal that age and gender do not have an impact on firm performance; however, the percentage of independent directors and percentage of executive share ownership have a positive influence. CEO Duality and Audit by the Big 4 firms imposed a negative effect on ROA and ROCE in UK firms.

The remainder of the study is organised as follows: The next section, which is the theoretical background, discusses the diversity and performance link in context to theories, followed by the literature review, which gives an overview of studies that have considered similar relationships. The methodology and data are given in Section 4. Section 5 discussed the results. Finally, Section 6 concludes the study.

## **2. Literature Review**

The United Kingdom's Corporate Governance Code 2016 recognizes that for a firm's long-term success, an effective board should be present. A board's role is to present the best example of leadership and work ethics and hence having the right team at the very top is very essential. They believe that the board should be challenging and should have constructive debate to overcome problems and come up to the best solutions. Diversity is mentioned to be one of the best promoters of debate, which includes having a good mix of males and females from diverse racial backgrounds. However, diversity is not just limited to race and gender but is more about the different experiences, knowledge and approaches that people bring with them to work. The importance of diversity extends to the point where the Corporate Governance Code requires annual reports of companies to voice out the process the nomination committee employs to appoint directors and how diversity has been taken into consideration. Davies, *et al.* (2015) report also points out the benefits secured by

the company, economy and the society by the employment of more women on the board. Apart from UK, several other countries have also established laws concerning diversity in their boardrooms.

In 2003, Norway was one of the first countries that introduced a law requiring public limited companies to achieve a minimum of 40% of board seats with women by 2008 (Ahern & Dittmar, 2012; Holst & Schimeta, 2011), followed by Spain which also imposed a 40% quota representation of women on the board of director's committee by 2015 (Adams & Ferreira, 2009). Learning from the examples of these countries, other European countries like Netherlands and France also introduced quotas for women on board positions (Bøhren & Strøm, 2010; Holst & Schimeta, 2011) however, Germany made it a voluntary option for firms in this regard.

Several researchers have empirically tested this phenomenon and have come up with their own viewpoints where some hint on a positive link, some on a negative relationship while some do not seem to find any link. Joecks, *et al.* (2013) investigated into "Gender Diversity and Firm Performance" for 151 companies listed on the German stock exchange over a five-year period ranging from 2000-2005. The variable used to measure the boardroom diversity was the number of females on the board, which was collected from the annual reports of the firms, and the firm performance was measured using Return on Equity (ROE) that was gained from the Thomson Financial Data stream. From the regression analysis that was carried out, a nonlinear relationship was found between ROE and gender diversity.

Evidence from the study concludes that a U-shaped link exists between gender diversity and firm performance. In other words, a certain level of diversity must be achieved before the benefits of an increased financial performance can be realized. Findings suggest, about 30% of the board should be females for the firm to experience firm performance that could not be achieved if the boardroom were only males. Joecks, *et al.* (2013) also finds out that gender diversity in the boardroom has a positive relationship with the multiple directorships of the directors as well as the board size. Moreover, a higher female representation was identified in the financials, telecommunications, pharmaceuticals, health and consumer goods industries as previous studies have also found out.

Reasons for the positive impact that women have on the firm performance could be because women are distinct from men as they are known to be more risk averse by taking less aggressive decisions (Croson & Gneezy, 2009) invest more sustainably (Apesteguia, *et al.*, 2012) and bring in new perspectives by raising different questions (Farrell, *et al.*, 2005). Therefore, the final recommendation given by Joecks, *et al.* (2013) regarding boardroom diversity suggested that given there are no limitations in the women eligible enough for the board positions, a minimum of 30% diversity in terms of gender should be attained.

Bear, *et al.* (2010) analyse the effect of board diversity and gender on corporate social responsibility (CSR) and firm reputation. Gender diversity was found to have a significant impact on CSR and reputation. A firm's well maintained reputation in the market tends to attract high quality applicants (Gatewood, *et al.*, 1993), who are likely to remain in the company for longer and have a higher job satisfaction level (Riordan & Shore, 1997). Good reputation allows easier launch of new products and entering in new markets is much easier when a positive image of the company is maintained in the eyes of the stakeholders (Dowling, 2006). All these aspects of reputation will reflect in the financial performance, institutional investment and the share price of the firm (Fombrun & Pan, 2006). A potential evidence of this positive link between diversity and CSR could be explained by earlier research that suggests that when firms have a higher female representation, the organization is engaged in activities that are more charitable. Moreover, when

females represent the board of a company, the firm is usually viewed as a socially responsible firm because it is likely to exhibit the concern that the firm has for women and the minorities. Finally, it was also found that having just a single female on the board might not bring in the positive effects as the single one may not be able to voice her concerns in a male dominated board and the effectiveness of the board increases with the addition of females. Therefore, as Konrad, *et al.* (2008) suggests, a minimum of three should be appointed on the board to experience the benefits of CSR ratings and hence enhanced corporate reputation. With the positive link identified between diversity, CSR and corporate reputation, a link with firm performance can also be introduced. Russo and Fouts (1997) and Donker, *et al.* (2008), conclude from their studies that active participation in CSR can lead to higher ratios of Return on Assets and Firms Market to Book value respectively.

Bhagat and Bolton (2008) have investigated the relationship between corporate governance and firm performance. Different aspects of corporate governance were looked into and compared to firm performance. It was found out that the value of stock ownership and separation of the CEO and Chair are positively related to the next year's operating performance of the firm. Additionally, there is evidence that in developed countries, firms that suffer with poor performance tend to hire more independent directors due to their association with increased firm performance (Erickson, *et al.*, 2005). According to the Cadbury Committee, a minimum of three non-executive directors should be on the board in order to realize improved performance (Black & Kim, 2012). Dahya and McConnell (2007) also find evidence of improved performance when UK firms increased the non-executive directors on the board committee to "comply or explain" the Cadbury recommendations.

Rose (2007) undertook a study based on Danish firms where the boardrooms are widely dominated by males. Moreover, the recruitment process is not dependent on official job openings but instead the network of business people sharing alike norms and values who refer each other into such top positions. Rose (2007) commences his research paper by recapping what Fama and Jensen (1983) had stated about the board of a firm. It was expressed as one of the most important control and monitoring mechanism internally to avoid unethical behaviour and the role of the board of directors is not only limited to satisfying the shareholders in term of share value (Rose, 2007) but meeting the needs of the remaining stakeholders is also as essential. As a result, the key to meeting the needs of all stakeholders is to have the right talent pool at the top positions that will ensure the needs of all the stakeholders. In order to ensure that people of the best abilities are governing the company, the selection process of these board members should be highly competitive where the most deserving ones are elected based on their skills and qualifications. Therefore, board diversity in Denmark is highly encouraged to ensure the top quality of management at the higher levels of the hierarchy. From the data gathered on a sample of Danish firms listed on the Copenhagen Stock Exchange from 1998-2001, no relation was found between the characteristics of the board, which were gender and educational background, and firm performance as measured by the Tobin's Q. Table A.1 in appendix summarizes empirical evidence from many authors and varying samples and their respective results.

### **3. Theoretical Background**

Till today, many theories have been employed to explain the boardroom diversity and a firm's financial success. Proponents of the well-known Agency theory highlight the conflict between the agents and the principals that may occur when an agent tries to fulfil his need on the principal's expense. Theorists have argued that diversity in the firm should be an area of concern because as diversity increases, there will be a greater number of outside directors on the board who will act independently from the inside directors and hence monitor the actions and intentions of the

managers for ensuring the interests of the shareholders. These possibly result in keeping agency costs to a minimum level, hence increasing the profits of the firm (Carter, *et al.*, 2010; Terjesen, *et al.*, 2009).

Board members are key determinants of a firm's success and it is their direction and leadership that takes a firm forward. It won't be wrong to say, the knowledge a firm possesses is due to its human capital and hence, wise selection, development and utilization of them could eventually create higher firm value (Lepak & Snell, 1999). The human capital theory postulates that investments in human beings in the form of education and training will pay off economically and evidence suggests that women are equally capable for senior positions as men although women may lack business expertise (Terjesen, *et al.*, 2009). Empirical evidence also verifies that the quality of human capital of a firm, (such as training, education, skills and experience) especially of the top managers have a major impact on the firm outcome (Finkelstein, *et al.*, 1996; Huselid, 1995).

Firstly, knowledge and experience being the reason behind the success of firms, human capital supporters argue that individuals graduating from the best educational institutes of the world should be hired and there are many reasons behind this approach. It has been said that they bring in the best knowledge, social network and prestige (Harrison, *et al.*, 2001) hence they generate the highest returns possible (Sherer, 1995). Therefore, board members with significant knowledge and experience are likely to provide the best that they can in terms of skills and direction to achieve the best results. Moreover, many a times, they have also been awarded with share ownership in their firms and therefore they are highly motivated to use all that they have very effectively to gain the maximum benefits.

Secondly, these board members are likely to have very good social contacts that will benefit the firm when for example expanding their operations globally. Finally, when such high quality individuals are recruited in the top positions of the firms, the reputation of the firm is likely to increase because of the assurance of high quality service that clients perceive from these board members. However, despite the advantages of having these top-notch board members, they can prove to be very costly for the firm due to the compensations and incentives that they may require.

Hence, to conclude, high calibre human capital is one of the most essential requirements for the success of a firm, so consequently firms should focus on attracting the best talent pool in their boardrooms from a wide range of backgrounds to increase experiences and expertise that will enhance the firm's performance. Cyert and March (1963) coincide with this point of view as they state that board gender and racial diversity produce innovative ideas and improve the decision making process and help improve the performance of the firm. Therefore, the higher quality human capital is employed, the better the firm performance.

Resource dependence theory is also an idea that connects its principle with the concept of diversity and firm performance. As per the theory, the resources of the company have an influence on the outcomes of business activities. In this case, the directors are considered one of the most important resources that influence the strategic direction of the firm and provides the firm with all the connections to the external resources. It is for this reason that the best available personnel hold the board positions that benefit the firm in the most superior way. The need to deal with complex ideas and uncertainties, has led many to claim that that a diverse pool of board members should be available to provide better guidance and leadership, resources and knowledge. Collectively, diversity will then improve firm performance too (Hillman, *et al.*, 2000).

Finally, an attempt was also made to connect the social psychology concept with diversity and firm performance. It articulates that as diversity increases, there is a large possibility of conflict and

confusion that may hinder the decision making process. Moreover, the minority group members may not be able to voice out their opinions to the majority group and therefore these conflicts can be costly to the firm and therefore this theory suggests a negative relationship to the firm performance (Westphal & Milton, 2000).

#### 4. Methodology and Data

This section explains the methodology and data used in the study to explain the relationship between boardroom diversity and firm performance. The nature of the data and the statistical analysis involved in this research make it a purely quantitative analysis which is similar to Joecks, *et al.* (2013) and Carter, *et al.* (2003).

For empirical analysis, we collect the data from annual reports of 154 firms listed on the London Stock Exchange of the FTSE 350 Index. The annual reports of the firms are taken from their respective website for the year ending in December 2013. Therefore, we have cross-sectional analysis of 154 firms for the year 2013. The FTSE index was chosen because it included the 350 top most companies listed on the London Stock Exchange and supplemented us with a good population from which we could choose a sample for testing the relationship.

Following Joecks, *et al.* (2013) and Erhardt, *et al.* (2003), we used financial performance of a firm as a dependent variable and diversity as an independent variable. In addition to these variables, we also used firm's size and the geographic location to control for observable heterogeneity. Similar measures have been used by other researchers (for details, see Carter, *et al.* (2003) and Coles, *et al.* (2008)).

Our empirical model represented in the following equation (1).

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_{10} X_{10} + \varepsilon \quad (1)$$

Where  $Y =$  Return on Assets (ROA) and Return on Capital Employed (ROCE)

$X_1 =$  percentage of females on the board

$X_2 =$  percentage of directors aged less than 45

$X_3 =$  number of directors

$X_4 =$  percentage of independent directors

$X_5 =$  percentage of directors with share ownership

$X_6 =$  indicates whether the CEO and chairmanship of the company is held by the same person

$X_7 =$  average number of executive directors on the board

$X_8 =$  specifies whether the firm is audited by one of the Big 4 accounting firms

$X_9 =$  total assets of the firm

$X_{10} =$  gearing ratio of the firm

$\varepsilon =$  the random error term

The above specification is applied to each of the two financial measures of performance. Reasons for choosing the ROA and ROCE for representing the financial performance is to compare with previous studies (Adams & Ferreira, 2009; Haslam, *et al.*, 2010; He & Huang, 2011). A high ratio of ROA and ROCE is an indication of a more efficient use of capital and this implies that the decisions taken are in the best interests of the firm.

The other variables covered include a wide range of diversity measures ranging from gender and age to the number of executive directorships of the firms. Starting with the first one, “ $X_1$ ” measures the percentage of female board member to the males. The higher this ratio, the more women have secured a position in the boardroom. Therefore, it is vital to know whether having a mix of genders on the board would have any particular influence on the firm performance.

The second variable “ $X_2$ ” is the percentage of board members that have an age of 45 or less. Many scholars have discussed and argue that mature directors are in the age of 45 or above (for details, see Izraeli and Talmud (1998)). Nakano and Nguyen (2011) finds that the average age of directors (i.e., 58) has a negative relationship with financial performance. Hence measuring the percentage of members that are much younger than their counterparts could indicate whether age is a factor or not in contributing towards financial success.

The third variable “ $X_3$ ” measures the number of directors on the board committee in an attempt to gather information about the size of the board. Guest (2009) did a study in the UK, comparing the board size with performance since having a greater number of members on the board could introduce many new ideas and better problem solving skills. However, it can also bring in conflict and disagreements among members. Therefore, including this variable will help us find the size relationship with firm performance.

The fourth variable “ $X_4$ ” measures the percentage of independent directors on the board who are outside directors that hold many directorship positions in other firms too. They mainly aid the directors in supervising and monitoring the executives in order to ensure high shareholder value. Importance of these directors were identified after major business collapses (Cadbury, 1992; Tyson, 2003) give particular attention to them. These directors can yet again have different influences on the firm value. Although independent directors can bring in extensive experience because they hold several other directorship positions, they might on the other hand may not prove to be very efficient due to their busy schedules. Hence, including this variable in the regression model may be able to specify its effect on the firm’s financial performance.

The “ $X_5$ ” measures the percentage of directors with share ownership in the company. It has been argued that when executives of a firm own shares of a company, they can either act in the best interest of the firm to maximize shareholder value by taking wise decisions. However, they can also take excessive risks to maximize their benefits on the expense of the shareholders. Mehran (1995) used this variable to find its impact on the financial performance.

The “ $X_6$ ” is of CEO Duality that denotes whether the positions of the CEO and the chairman of the firm are held by the same individual. Chen, *et al.* (2008) included this variable to compare it to the financial performance and found insignificant results. In this research, it is included as a dummy variable where “1” indicates that CEO Duality exists and a “0” otherwise. The Cadbury (1992) report strongly suggested that these two roles should be separated because too much power concentrated in one person’s hand could lead to the fulfilment of ones owns needs on the expense of the others. Therefore, to prove this perception, this variable will also be tested against financial performance.

The “ $X_7$ ” is a measure of the average number of executive directors on the board. No prior study has found that compares this to the financial performance, however it will be useful to include it to investigate whether having a larger number would have a positive or a negative effect on the firm’s financial performance.

The “ $X_8$ ” variable is a dummy variable confirm whether the financial statements and accounts of the firm are audited by one of the big four accounting firms (KPMG, Ernst & Young, PWC and Deloitte) or not. Francis and Yu (2009) finds out that the audit quality is higher when audited by the

big four accounting firms than the smaller ones. Consequently, finding out the relationship between having a big auditing firm, higher quality financial statements and firm financial performance is found to be relevant or not in this study.

Julizaerma and Sori (2012) mentions that the total assets of a firm are likely to represent the size of a firm and how strong it is financially. Kurshev and Strebulaev (2007) also mentions that the total assets of a firm could be used as a measure for firm size. He also discloses his finding of larger firms having higher gearing ratios. As per Carter, *et al.* (2003), he suggested to include the log of total assets as a control variable when finding the relationship of diversity and firm performance. It is from these empirical findings that we have decided to choose the total assets and the gearing ratio of the firm as control variables for size. The third control variable was of location as all of the companies were in the UK for a fair analysis and comparison.

The descriptive statistics of the variables are presented in the Table 1.

**Table 1.** Descriptive statistics

<b>Variables</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Return on Capital Employed (ROCE) (in %)</b>	0.06	0.04	0.15	-1.30	0.73
<b>Return on Assets (ROA) (in %)</b>	10.49	7.68	25.23	-32.74	294.80
<b>Percentage of Female on Board</b>	17.83	16.67	11.40	0.00	50.00
<b>Percentage of directors aged &lt; 45</b>	7.94	0.00	10.61	0.00	45.45
<b>Percentage of directors aged &gt; 45</b>	94.08	100.00	14.66	0.00	100.00
<b>Number of Directors</b>	9.11	9.00	2.23	4.00	17.00
<b>Percentage of independent directors</b>	57.43	57.14	13.26	0.00	92.31
<b>Percentage of directors with ownership share</b>	2.80	0.18	9.76	0.00	60.21
<b>CEO duality (dummy)</b>	0.04	0.00	0.20	0.00	1.00
<b>Average number of Executive directors on the board</b>	0.59	0.50	0.44	0.00	2.00
<b>Audited by big 4 (dummy)</b>	0.96	1.00	0.20	0.00	1.00
<b>Log of Total Assets</b>	6.36	6.28	0.68	4.52	8.41
<b>Gearing ratio of the firm</b>	19.61	19.72	14.30	0.00	64.66

Table 1 shows the basic statistical measures like the Mean, Median, standard deviation and the minimum and maximum values. The measures of financial performance, which are ROCE and ROA, have mean values of 0.06% and 10.49% respectively. As far as we know no other empirical study used ROCE as a measure of financial performance, however, ROA is used by many other studies. Finally, the standard deviation of ROA and ROCE were 25.23% and 0.15% respectively that signalling a possibility of high volatility in ROA. From the table it is quite evident that the percentage of female representation on top UK firms is only around 17.83%, which is less than what prior research suggests. For maximum benefits to be reaped, empirical evidence suggests that at least 30% of the board should be females whereas in the analysis conducted a minimum of 0 and a maximum of 50% was discovered. As a matter of known fact and as past empirical evidence proves the average age of directors in a sample of 797 firms was 59 and in our sample as well, we manage to find that more than 94% of the directors of the firms were 45 or greater while some firms having all directors in their senior years.

The number of directors in the company is an indication of board size and in our sample, the average rounds off to 9 directors. This is however lower compared to what authors in the past have declared like Joecks, *et al.* (2013), Erhardt, *et al.* (2003) and Carter, *et al.* (2003) where their findings were as follows respectively: 11.45, 12.52 and 10.9. The next finding was the percentage of independent directors, which was discovered as 57.43%. This result is a convincing sign of firms operating in the UK particularly since the Hampel (1998) and the Tyson (2003) report strongly suggest that a minimum of 50% of the board should be independent. Therefore, concerning these recommendations, the firms in the UK have achieved a sound level of independence.

CEO Duality which was a dummy variable specifies whether CEO duality exists or not. On average this number was very low signalling that CEO duality in our sample of firms does not exist which is a positive sign, as The UK Corporate Governance Code does not recommend that the same individual should hold these two positions.

The next variable is a measure of the percentage of share ownership by executives in the firm and the average value is approximately to 2.8%. In a similar study by Hutchinson and Gul (2004) on firms in Australia, this value was only 0.072 which is much lower. This difference could possibly be attributed towards the large duration gap between this study and the one by Hutchinson and Gul (2004) and the geographical difference between the samples of firms used. The variable “Big 4” is again another dummy variable that will specify whether one of the big 4 accounting firms (KPMG, E&Y, PWC and Deloitte) are one of the auditors of the firm. From the descriptive statistics, it is noticed that the average value is 0.96 that is a very close value to 1 indicating that nearly all the firms have these large firms auditing their financial statements. In order to see the correlation among different variables, we presented a correlation matrix in the appendix Table A1. In conclusion, correlation did not release any useful information about the dependency of the firm’s financial performance on the variables of diversity. However, the different diversity variables do tend to have minor relations that can be counted upon.

## 5. Results and Discussion

The empirical findings are presented in Table 2. According to the results, the percentages of females on the board do not have any significant effect to the return on assets of the firm. However, the percentage of independent directors are likely to have a statistically significant positive effect on ROA whereas CEO duality and audit by a big 4 firm are likely to have a negative statistically significant effect. The value of  $R^2$  is 0.208 which although is not very high, but does indicate some presence of a relationship between the variables. Comparing this result with that of Joecks, *et al.* (2013), Erhardt, *et al.* (2003), we find R-Squared values of 0.1042, 0.06 and 0.061 respectively. At a glance, it can be instantly said that these values are much lower compared to the values that we have found out. Our model is a good representation of the variables that it has used and the relationship seems to be much stronger. Nevertheless, the differences are most likely due to the differences in the sample sizes, the sample itself, the time-periods when the data was gathered and the variables used to measure diversity and firm performance. The adjusted  $R^2$  however, is quite low indicating a weak relationship among the variables.

Table 2. Results of return on assets (ROA) of the firms

Dependent Variable : Return on Assets (ROA)	Estimates	Std. Error	t-value	p- value	Collinearity Statistics
(Constant)	41.118	11.699	3.515	0.001	
Gender (female)	0.072	0.092	0.787	0.434	0.824
Age Above 45	-0.097	0.116	-0.835	0.407	0.663
Number of Directors	0.184	0.501	0.367	0.714	0.635
Number of independent directors	0.146	0.078	1.861	0.067	0.705
Percentage of directors with ownership share	0.200	0.122	1.641	0.105	0.777
CEO Duality	-12.634	5.622	-2.247	0.028	0.794
Average number of Executive directors on the board	-0.807	2.468	-0.327	0.745	0.734
Audited by big 4	-10.438	5.651	-1.847	0.069	0.597
Log of Total Assets	-4.817	1.809	-2.662	0.010	0.581
Gearing ratio of the firm	-0.111	0.079	-1.394	0.168	0.795
<b>R<sup>2</sup> = 0.208; Adjusted R<sup>2</sup>= 0.098</b>					

Table 3 presents the results related to the ROCE of the firm as a dependent variable. The R<sup>2</sup> of the Model in respect to the ROCE of the firm is 0.316, a sign indicating that there is a strong link between the diversity variables and the return on capital employed by a firm. Comparing this result with the ROA that was stated earlier, this is much higher, signalling that the diversity in a firm affects the ROCE of a firm more than the ROA. Furthermore, the adjusted R<sup>2</sup> rounds of to 0.221, which is a strong, value supporting the strength of our model. This estimate is also much higher compared to the one for ROA and hence in our study, increasing diversity will surely affect the ROCE.

Table 3. Results of Return on Capital Employed (ROCE) of the firms

Dependent Variable : return on capital employed (ROCE)	Unstandardized Coefficients	Std. Error	t-value	p-value	Collinearity Statistics
(Constant)	-0.156	0.129	-1.210	0.230	
Gender (female)	-1.695E-05	0.001	-0.017	0.987	0.824
Age Above 45	-0.001	0.001	-0.899	0.372	0.663
Number of Directors	-0.002	0.006	-0.332	0.741	0.635
Number of independent directors	0.002	0.001	2.036	0.045	0.705
Percentage of directors with ownership share	0.003	0.001	2.550	0.013	0.777
CEO Duality	-0.095	0.062	-1.543	0.127	0.794
Average number of Executive directors on the board	-0.007	0.027	-0.242	0.809	0.734
Audited by big 4	-0.127	0.062	-2.035	0.045	0.597
Log of Total Assets	0.046	0.020	2.319	0.023	0.581
Gearing ratio of the firm	-0.001	0.001	-1.468	0.147	0.795
<b>R<sup>2</sup> = 0.316; Adjusted R<sup>2</sup>= 0.221</b>					

As per our research questions, age and gender of board of directors are not likely to affect the performance of the firm. In other words, having more females or younger directors does not bring in significant benefits to the firm. We do find a relationship between diversity and firm financial performance for ROA and ROCE. ROA is said to be positively statistically significant to the percentage of independent directors and negatively with CEO duality and audit services by Big 4 accounting firms. On the other hand, ROCE is found to be positively statistically significant to the Percentage of independent directors and executive share ownership, while a negative statistically significant result exists between Big 4 accounting firms and ROCE.

Comparing our results to the theories mentioned in the literature review section earlier, the theories are being supported to some extent because the agency theory has been supported due to the positive link between the independent directors and firm performance with both ROA and ROCE. Likewise, CEO duality was found to be negatively statistically significant with the ROA and therefore the recommendations made by Cadbury and other corporate governance reports on CEO duality have been justified. Consequently, the human capital and resource dependence theory were not found to be consistent with our findings as no relationship was found as well as the social psychology theory because the number of directors on the board (board size) was not found to have any impact on the financial ratios.

## 6. Conclusion

The objective of this research was to find out whether diversity within the board members brings out any positive influence on the financial performance; and to find out whether gender and young aged individuals had an impact on the financial performance of the firm. For measuring the financial performance of a firm, the ROA and ROCE were used, whereas several independent variables were selected for defining diversity in our research model while controlling for firm size.

In order to carry our research out, we had collected the financial ratios and the data of the board of directors from the annual reports of 2013 for a sample of 154 companies in the FTSE 350 listed on the London Stock Exchange. The results of earlier studies coincide with the findings of this study on this topic. Nonetheless, we found no significant relationship between the percentage of females on the board with the financial performance indicators of ROA and ROCE, and the same is applicable for directors less than 45 years of age. However, the percentage of independent directors, percentage of executive shares, CEO duality and Audit by Big 4 firms were found to affect the financial ratios of the company. Hence, from the theories discussed earlier, agency theory has been supported by our results whereas no evidence was found to support the additional theories.

### *Recommendations and Further Research*

Based on the conclusions that were drawn from our study, it would be highly recommended for firms seeking financial gains in terms of ROA to have a higher percentage of independent directors on the board whereas to improve ROCE, a higher percentage of executive share ownership should also be maintained. Moreover, CEO duality should be strictly avoided due to the strong negative impact it may have on the financial performance of the firms.

Considering the methodology of the research, it can be recommended to use a larger sample of firms and data should be collected for more than one year for more authentic results. Additionally, a study can also be conducted on smaller firms to find the implications for diversity and firm financial performance to realise if having a more diverse board for such firms could benefit them in financial terms. Moreover, for comparison studies can also be done among firms in different locations and among different industries to comprehend whether board room diversity in different countries or different industries affects the firm performance in similar ways or not.

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Appendix: Table A1 (Correlation matrix of 12 relevant variables)

	Return on Capital Employed	Return on assets	Gender (female)	Age Above 45	Number of Directors	Number of independent directors	Percentage of directors with ownership Share	CEO Duality	Average number of Executive directors on the board	Audited by big 4	Log of Total Assets	Gearing ratio of the firm
Return on Capital Employed	1											
Return on assets	0.145 (0.084)	1										
Gender (female)	0.006 (0.942)	0.058 (0.483)	1									
Age Above 45	-0.078 (0.55)	0.118 (0.161)	0.162 (0.105)	1								
Number of Directors	0.105 (0.208)	-0.077 (0.353)	0.097 (0.235)	-0.061 (0.577)	1							
Number of independent directors	0.154 (0.063)	0.008 (0.923)	0.241** (0.003)	-0.163 (0.137)	0.219** (0.007)	1						
% of directors with ownership Share	0.055 (0.512)	0.022 (0.795)	-0.173* (0.036)	0.027 (0.81)	-0.104 (0.214)	-0.077 (0.358)	1					
CEO Duality	-0.042 (0.619)	-0.055 (0.509)	-0.061 (0.459)	-0.074 (0.500)	-0.026 (0.756)	0.018 (0.825)	0.182* (0.028)	1				
Avg. No. of Executive directors	0.003 (0.976)	-0.065 (0.434)	0.209* (0.01)	-0.217* (0.046)	-0.244** (0.003)	0.093 (0.259)	-0.140 (0.092)	-0.062 (0.455)	1			
Audited by big 4	-0.073 (0.384)	-0.034 (0.686)	0.228** (0.005)	-0.406** (0.000)	0.224** (0.006)	0.212** (0.009)	-0.166* (0.045)	0.041 (0.614)	0.149 (0.07)	1		
Log of Total Assets	0.073 (0.383)	-0.315** (0.000)	0.092 (0.264)	-0.283** (0.009)	0.470** (0.000)	0.357** (0.000)	-0.029 (0.734)	-0.014 (0.862)	-0.191* (0.021)	0.094 (0.254)	1	
Gearing ratio of the firm	-0.092 (0.271)	-0.183* (0.026)	0.143 (0.083)	-0.118 (0.287)	0.077 (0.351)	0.069 (0.405)	-0.065 (0.439)	-0.159 (0.054)	0.016 (0.848)	0.127 (0.124)	0.250** (0.002)	1

Notes: Values in the parenthesis are p-values; '\*' represents the significance level at 5%, and '\*\*' shows significance level at 1%.