

## AGE HETEROGENEITY AND CORPORATE SOCIAL RESPONSIBILITY IN NIGERIA MANUFACTURING COMPANIES

**Ezejiofor, Raymond A.**

Department of accountancy  
Nnamdi Azikiwe University, Awka  
Mail: [thaddray4life@yahoo.com](mailto:thaddray4life@yahoo.com)

**Ezekwesili, Tochukwu P.**

Department of accountancy  
Nnamdi Azikiwe University, Awka  
Mail: [ezekesilitochukwu@gmail.com](mailto:ezekesilitochukwu@gmail.com)

### **Abstract**

*This present study assesses the relationship between age heterogeneity and Corporate Social Responsibility in Nigeria. Ex-post facto research design was employed. Data were sourced and computed for the 38 sampled listed manufacturing companies for the period 2010-2019. The extracted data were analyzed using both descriptive and inferential statistics. Given the outcome of ordinary least square and Wald  $Ch^2$ -statistics, the study revealed that age heterogeneities affect Corporate Social Responsibility. The study therefore concluded that age heterogeneity has no significant relationship with Corporate Social Responsibility in Nigeria. On this note, there is need for the board to have more young and vibrant board members in order to further improve on the level of corporate social responsibility. Specific age limits should be made for those that should constitute the boardroom of companies.*

**Keywords:** Age heterogeneity, Corporate Social Responsibility

## Introduction

Good corporate governance ensures effective board oversight and a better ability to respond to stakeholder demands (Moneva, Bonilla-Priego, & Ortas, 2019). Many firms' boards of directors are currently under increased pressure from stakeholders on corporate social responsibility concerns (Rahim, 2012). At both the global and national levels, the problem of boardroom heterogeneity has gotten a lot of attention in academic and business literature (Bassyouny, Abdelfattah, & Tao, 2020). Boardroom heterogeneity is defined by Khatib, Abdullah, Elamer, and Abueid (2020, p.3) as "heterogeneity among the members of boards in terms of age and gender."

Mittelbach-Hörmanseder, Hummel & Rammerstorfer (2020) argue that corporate social responsibility disclosure has become an essential aspect of business (Yarram & Adapa, 2020), providing crucial information to stakeholders and the market. Positive corporate performance and reputation (Servaes & Tamayo, 2013); lower idiosyncratic risk (Lee & Faff, 2009); and improve management competency are all advantages of CSR disclosure (Renneboog, Ter Horst, & Zhang, 2008a, b). CSR disclosure is now seen as a window into a company's operations and a link to financial performance (Pekovic & Vogt, 2020), which can help improve credit ratings (Jiraporn, Jiraporn, Boeprasert, & Chang, 2014). Corporate social responsibility is also a hot topic in Nigeria, where various companies are being forced to take responsibility for the environmental impact of their operations (Fodio & Oba, 2012). The Nigerian Stock Exchange (NSE) has consistently shown its support for environmental, social, and governance (ESG) issues, and as a result, it launched a staged effort to integrate sustainability reporting, which resulted in the publication of the Sustainability Disclosure Guidelines (SDG).

The Board of Directors is a corporation's highest decision-making body (Shaukat, Qiu, & Trojanowski, 2016), and it plays a vital part in the company's operations and play an important role in the governance of the company (Fama & Jensen, 1983). They are vital elements in the internal corporate governance of the company. The internal governance mechanisms "involves the system of rules, practices and processes by which a company is directed and controlled" (Ong & Djajadikerta, 2017).

Heterogeneity in the boardroom frequently leads to "better insights about markets, consumers, employees, and business possibilities," which can lead to improved company performance (Thomsen & Conyon, 2012). Heterogeneity in the boardroom has a favorable impact on policy and decision-making, as well as corporate social responsibility (CSR) involvement (Hartmann & Carmenate, 2020). One of the most crucial indicators of a board's numerous aspects is boardroom heterogeneity (Kang, Cheng, & Gray, 2007).

Research on boardroom heterogeneity is still at its infancy; however, Akram, ul Haq, Natarajan, and Chellakan (2020) reported shareholders are becoming increasingly concerned on how board composition affects strategic firm performance. Available studies show that corporate social responsibility disclosure is partly attributed to differences in the composition of the board (Hartmann & Carmenate, 2020; Akram, ul Haq, Natarajan, & Chellakan, 2020). Studies in developed countries confirm this; such as, Tilt and Lester (2012) in Australia; Jizi (2017) and Shaukat, Qiu, and Trojanowski (2016) in the U. K.; and Mallin and Michelin (2011) in the U.S; Liu and Zeng (2017) in China; and Mercier-Suissa and Aziz (2015) in Lebanon were done in western countries. None of these researches were conducted in a developing country, leaving a gap. Musa, Gold, and Aifuwa (2020) used a dichotomous categorization technique to measure age variety in the Nigerian environment. This method has some drawbacks, which can be overcome by using an advanced heterogeneity measuring

instrument like the Blau's index. Based on the above research problem, this study determines the effect of age heterogeneity on corporate social responsibility disclosure.

### **Review of related literature**

The association between age heterogeneity and business success has yielded varied results in studies. Age diversity had no favorable effect on corporate performance, according to Mahadeo, Soobaroyen, and Hanuman (2012). In Scandinavian countries, Randy, Thomsen, and Oxelheim (2006) found no effect of age diversity. In the Netherlands, Engelen, van den Berg, and van der Laan (2012) discovered a hyperbolic association. This suggests that, up to a point, age diversity will improve firm performance. More age diversity after that will have a negative impact on the company's performance. Age diversity at work, therefore, refers to differences in age distribution among employees and is used to describe composition of the organization as a whole or composition of workgroups within an organization (Pytlovany & Truxillo, 2015)..

Age diversity, on the other hand, adds to CSR since it may lead to more balanced decision-making that considers a wider range of stakeholders (Aguilera & Jackson, 2010). Age has an impact on philanthropic decisions, according to Post, Rahman, and Rubow (2011). As directors grow older, they become more aware of societal issues and more motivated to contribute to their improvement (Hafsi & Turgut, 2013). Furthermore, as a matter of logic and principle, younger directors are typically considered as more sensitive to environmental and ethical issues. Such awareness leads to socially responsible and environmentally conscious behavior (Bekiroglu, Erdil, & Alkpan, 2011).

### **Empirical Studies**

In a study published in 2020, Beji, Yousfi, Loukil, and Omri looked at the impact of board diversity on corporate social responsibility in France. From 2003 to 2016, the sample included all listed companies in the French SBF. Secondary data was used in the study, which was then analyzed using a multiple regression technique. Age diversity is favourably connected with corporate governance, human resources, human rights, and environmental activities, according to the findings. Prudêncio, Forte, Crisóstomo, and Vasconcelos (2020) looked into the impact of diversity on corporate social responsibility in the board of directors and top management team. For the years 2016 to 2017, 194 firm-year observations were gathered from the Econometrical and CSR Hub datasets. The research used secondary data collected over a two-year period and analyzed using the multiple regression technique. The findings revealed a non-significant detrimental effect of age heterogeneity on CSR in Brazilian businesses. In Malaysia, Rahman, Zahid, and Jehangir (2020) looked examined the impact of age differences on company performance. The sample included 360 non-financial companies that were listed on Bursa Malaysia. For the years 2010 to 2014, the study used secondary data from annual reports and Thomson Reuters DataStream. Multiple regression techniques were used to analyze the data. The findings revealed that the age of the directors had a large positive influence on share price but had no effect on ROA. In Malaysia, Hassan, Saleh, and Ibrahim (2020) investigated the interplay between board diversity, financial performance, and corporate social responsibility disclosure. The sample comprised of 205 companies listed on Bursa Malaysia. Secondary data was used in the study, which was then analyzed using a multiple regression technique. Age had a negative negligible effect on changes in ROA and a positive insignificant effect on CSR disclosure index, according to the findings. Musa, Gold, and Aifuwa (2020) investigated the impact of board diversity on the

extent to which listed industrial goods firms in Nigeria report on sustainability. The sample consisted of 13 Nigerian Stock Exchange-listed industrial goods manufacturing companies. The research is based on secondary data from annual reports published between 2014 and 2018. Panel least squares regression was used to analyze the data. The findings revealed that board member age had a considerable detrimental impact on sustainability reporting. In China, Liu and Zeng (2017) investigated the link between age diversity and corporate social responsibility. They used the ordinary least squares method and the two-stage least squares method to study a sample of 305 publicly traded companies from 2010 to 2014. They discovered that corporate social responsibility is adversely correlated with age diversity. Nwakoby, Ezejiolor, and Ajikec (2018) investigated the association between board traits and directors tunneling in Nigerian conglomerates. Time series data and an ex post fact study design were used. With the help of SPSS Version 20.0, hypotheses were tested using multiple regression and Pearson Coefficient Correlation. According to the findings, board size has a negative significant link with related party transactions in Nigerian conglomerates. Another finding is that board independence has a considerable favorable impact on related party transactions in Nigerian conglomerates. Harjoto, Laksmana, and Lee (2015) looked at how board diversity affects corporate social responsibility in the United States. From 1999 through 2011, they studied 1,489 U.S. businesses. They employed seven distinct board diversity measures. According to the research, there is a link between age and corporate social responsibility. In Lebanon, Mercier-Suissa and Aziz (2015) looked at the impact of boardroom diversity on corporate social performance. A total of 41 Lebanese businesses were studied. There was no discernible link between age and corporate social performance, according to the findings. The impact of boardroom diversity on corporate social performance was studied by Hafsi and Turgut (2013). A random sample of 95 companies from the Sample Index was included in the study. The year of the research was 2005. They discover that age has a considerable impact on corporate social performance. The relationship between board composition and environmental CSR was explored by Post, Rahman, and Rubow (2011). The sample included 49 electronics companies and 40 chemical companies. They employed multiple regression technique in analysing the secondary data utilised for the study. The results found support for older directors in supporting CSR practices than younger directors. Ezejiolor, Nzewi, and Okoye (2014) evaluated the Altman Model's ability to predict the risk of corporate bankruptcy/ failure in the Nigerian banking sector. The information was gathered from the banks' annual reports and accounts. The Altman prediction method was used. The Model was found to be capable of accurately estimating the failure potential of sound and healthy banks. The findings also reveal that the Altman bankruptcy prediction model might have correctly anticipated the failure of the Nigerian banks that actually failed. Darmadi (2010) investigated the link between board diversity and financial success of companies listed on the Indonesian Stock Exchange (IDX). Gender, nationality, and age are three demographic characteristics of board members that are utilized as diversity proxies. Using a sample of 169 publicly traded companies, this study discovers that the proportion of young members is positively related to market performance, indicating that having young people on boards of directors is associated with better financial performance.

Few researches have looked into the role of age variability in explaining CSR outcomes globally. The majority of these researches were conducted in Western countries, with only a few conducted in underdeveloped countries, leaving a gap. The use of the Blau's index to evaluate heterogeneity rather than counting marks a noteworthy achievement not previously seen in extant Nigerian studies. In previous studies, executive heterogeneity was assessed as the proportion of executive directors to the overall number of directors (Post, Rahman, & McQuillen, 2015; Majeed, Aziz, & Saleem, 2015).

## Methodology

### Research Design

The ex-post facto research design was used in this study. This method was chosen because the study's goal is to identify the causes or variables that are linked to a specific type of occurrence or behavior by examining past events of previously existing situations. As a result, the researcher has no control over these aspects or variables because the events have already occurred and cannot be modified or manipulated.

A population, according to Nachmias and Nachmias (2009), is the whole collection of components about which we want to draw conclusions. The study's target demographic was all publicly traded manufacturing enterprises in Nigeria; however, as of December 31st, there were no publicly traded manufacturing companies in Nigeria.

### Sample and Sampling Technique

In order to arrive at the sample of the study, a multi-stage sampling technique was adopted. *First*, a probabilistic sampling technique (such as Taro-Yamane formulae) will be employed in arriving at the actual sample size of the study. The Taro Yamane's sample size formula is given as:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Sample size; N = Target Population; e = Level of Significance (0.05%); 1 = Statistical constant

$$n = \frac{48}{1 + 48(0.0025)}$$

$$n = \frac{48}{1 + 0.12}$$

$$n = \frac{48}{1.12}$$

$$n = 43$$

Given the nature and aggregate characteristics of manufacturing companies openly traded on the NSE, a non-probabilistic sampling technique (purposive sampling) was used to pick a sample of 38 manufacturing companies from a total of 48, accounting for 79% of the total population. Purposive sampling was chosen to pick manufacturing companies that had provided the relevant dataset for this investigation.

### Method of Data Collection

The study relied on secondary data from financial statements of manufacturing businesses openly traded on the NSE's floor for the year ending December 31, 2019. The study relied on audited financial accounts since they are a reliable source of financial and non-financial data that is also openly available.

### Composite Models of the Study

$$CSRDI_{it} = \alpha_0 + \alpha_1 Agehet_{it} + \varepsilon_{it}$$

$$CSRDI_{it} = \alpha_0 + \alpha_1 Agehet_{it} + \alpha_2 Fsize_{it} + \alpha_3 Fage_{it} + \varepsilon_{it}$$

Where: *CSRDI*=(corporate social responsibility index – CSR measure);

*Agehet*=Age heterogeneity;

*Fsize*=Firm size;

*Fage*=Firm age;

$\alpha_0$ - $\alpha_7$ =Coefficients of regression;

e=Error term; *i*=1, *t*=Time-frame.

### Method of Data Analysis

The nature of the dataset used for the investigation was depicted using descriptive statistics. Given that the study used panel data, the researchers used the Ordinary Least Square (OLS) estimation approach as well as fixed effect (FE) and random effect (RE) regression to validate the study hypotheses. The F-statistic will be used to examine the significance of the association between the variables in the model at a significance level of 0.05. A p-value of less than 0.05 indicated that the variables in the model had a significant association, while a p-value of more than 0.05 indicated that there was no evidence of a significant relationship between the variables. The statistical analysis will be carried out by means of Microsoft software - STATA 13.0 version.

### Decision Rule

Reject  $H_0$  if the P-value of the test is less than  $\alpha$ -value (level of significance) at 5%, otherwise accept  $H_1$ .

### Data Analysis

**Table 1: Descriptive Statistics of the Variables**

| Statistics | csr <sub>di</sub> | age <sub>het</sub> | fsize  | fage    |
|------------|-------------------|--------------------|--------|---------|
| Mean       | .7291             | 8.1053             | 7.1966 | 29.9815 |
| Median     | .8000             | 7.5000             | 7.1459 | 34.0000 |
| Maximum    | 1                 | 12                 | 9.2409 | 55.0000 |
| Minimum    | 0                 | 4                  | 5.0927 | 1       |
| Std. Dev.  | .2051             | 2.3176             | .9168  | 12.9763 |
| Skewness   | -1.0970           | .1909              | -.0514 | -.7483  |
| Kurtosis   | 5.3652            | 1.8894             | 2.2384 | 2.4203  |
| Counts     | 378               | 380                | 378    | 378     |

Source: Computed by Researcher, via STATA 13.0 software

Presented in Table 1 is the descriptive statistics of dependent variable (corporate social responsibility – *csr<sub>di</sub>*), the independent variables (age – *age<sub>het</sub>*), and control variables (firm size – *fsize*, and firm age – *fage*). It can be observed that none of the variables exhibited negative average values (mean); this is expected, given the characteristics of the periods covered (2010-2019) and impact of improved disclosure requirements by quoted manufacturing companies initiated by International Financial Reporting Standards (IFRS).

In addition, the annual standard deviations range from .2051 (*csr<sub>di</sub>*), 2.32 (*age<sub>het</sub>*), .9168 (*fsize*), and 12.98 (*fage*). The yearly standard deviations were not too far apart, indicating that the analyzed businesses' boardroom heterogeneity and corporate social responsibility disclosures are strongly linked. Surprisingly, every boardroom heterogeneity (*age<sub>het</sub>*) panel data series had non-zero skewness. The variable, *age<sub>het</sub>*, was skewed to the right much further.

Furthermore, all of the variables have a normal distribution, as evidenced by the kurtosis values, which are close to three (3) (Gujarati, 2003); this implies that all of the research variables have a normal distribution which was employed in estimating gender heterogeneity lies within 0 to 0.5 (mean *gend<sub>het</sub>* = 0.4509); an indication that the diversity in boardroom of quoted manufacturing companies are heterogeneously diverse.



## Hypothesis

Adapting the Ordinary Least Square (OLS) statistical tool was to test the hypothesis to examine the effect of age heterogeneity on corporate social responsibility of quoted manufacturing firms.

**H<sub>0</sub>1:** *There is no significant effect of age heterogeneity on corporate social responsibility of quoted manufacturing firms.*

**Table 2: Results of Model 3 Showing Age Heterogeneity and Corporate Social Responsibility of Quoted Nigerian Manufacturing Companies**

| <i>Dependent Variable: Corporate Social Responsibility (CSRDI)</i> |                       |              |                      |              |                       |              |
|--|-----------------------|--------------|----------------------|--------------|-----------------------|--------------|
| <i>Estimator Variable</i>  | <i>OLS (Obs.=378)</i> |              | <i>FE (Obs.=378)</i> |              | <i>RE (Obs. =378)</i> |              |
|  | <i>Coef.</i>          | <i>Prob.</i> | <i>Coef.</i>         | <i>Prob.</i> | <i>Coef.</i>          | <i>Prob.</i> |
| Agechet  | -0.0014<br>(-0.32)    | 0.750        | -.0015<br>(-0.37)    | 0.715        | -0.0015<br>(-0.36)    | 0.720        |
| R-Squared  | 0.0003                |              |                      |              |                       |              |
| R-Squared Adj.   | 0.0024                |              |                      |              |                       |              |
| Prob. F.   | 0.7499                |              |                      |              |                       |              |
| R-Squared (within)   |                       |              | 0.0004               |              | 0.0004                |              |
| R-Squared (between)  |                       |              | 0.1849               |              | 0.1849                |              |
| R-Squared (overall)  |                       |              | 0.0003               |              | 0.0003                |              |
| Wald Ch2   |                       |              |                      |              | 0.13                  |              |
| Prob. Ch2  |                       |              |                      |              | 0.7204                |              |
| Hausman Test   |                       |              | Chi2(2) = 0.02       |              | Prob>Chi2= 0.8756     |              |

*Source: Computed by Researcher, via STATA 13.0 software \* significant at 1% level \*\* at 5% level  
 Items in parentheses are t-ratios; agechet = age heterogeneity; csr di = corporate social responsibility*

Table 2 presents the results of Ordinary Least Square (OLS), Fixed Effect (FE) and Random Effect (RE) for age heterogeneity (*agechet*) and corporate social responsibility (*csr di*) of the entire panel data. In model 3, we found that *agechet* is insignificant at 1% level in explaining *csr di*. The output OLS indicates that *agechet* has a larger beta coefficient in absolute terms than FE and RE. Using OLS and RE, the coefficient of *agechet* is -.0014 and -.0015 respectively, indicating that when publicly quoted manufacturing companies' boardroom age is heterogeneous, it will lead to approximately 0.14% change in their level of *csr di*.

Furthermore, the beta value for FE is -.0015, but at the 5% level, both FE and RE are insignificant. When the boardroom age of publicly traded manufacturing businesses is diverse, the coefficient of FE (-.0015) indicates that the level of *csr di* will alter by about -0.15 percent. The *agechet* t-tests for OLS, FE, and RE, respectively, are -0.32, -0.37, and -0.36; the t-test also reveals that *agechet* is unimportant in explaining *csr di*. However, the R<sup>2</sup> for both FE and RE is 0.0004, which is higher than OLS. The F-statistic is 0.10, with a p-value of 0.7499, which is insignificant; this backs up the notion that there is a negative link between age heterogeneity and corporate social responsibility in Nigeria's publicly traded industrial firms.

The Chi2(2)=0.02 and p-value= 0.8756 findings of Hausman specification tests indicate that Random Effect is more efficient than Fixed Effect (FE). The findings of FE revealed that the subjects from whose measurements are taken are random, and that the disparities across publicly traded manufacturing companies in Nigeria are thus uninteresting, implying that the subjects and their variations are not equal.

**Decision:** Reject H<sub>0</sub> if the P-value of the test is less than  $\alpha$ -value (level of significance) at 5%, otherwise accept H<sub>1</sub>. Since Wald Ch2-statistics is 0.02 with a probability value (p-value)

of 0.8756 showing that it is insignificant, we reject the rejection of the alternate hypothesis and accept the null hypothesis. This entails that there is no significant effect of age heterogeneity on corporate social responsibility of quoted manufacturing firms in Nigeria.

### **Discussion of Finding**

**Age Heterogeneity and Corporate Social Responsibility:** The results demonstrate that age heterogeneity has no significant effect on our dependent variable, corporate social responsibility, according to the findings. This conclusion is corroborated by Harjoto, Laksman, and Lee (2015); Darmdi (2010), but it contradicts our a priori anticipation as well as Prudencio, Forte, Crisostomo, and Vasconcelos (2020); Mercier-Suissa and Aziz (2015). Upper Echelons Theory backs up this conclusion.

### **Conclusion**

Furthermore, two variables (firm size and age) capable of regulating the association between boardroom heterogeneity and CSR were used to make the study unique. More specifically, this study examined whether boardroom heterogeneity has a substantial impact on CSR of publicly traded manufacturing companies in Nigeria, in order to fill a gap in the Nigerian context. According to the findings, there is no significant effect of age heterogeneity on CSR. The study indicated that firm size and age play critical roles in the relationship between boardroom heterogeneity and CSR in Nigeria, based on the results of ordinary least square, test, fixed effect, and random effect.

Based on the study's findings, it was suggested that the board should have more youthful and lively board members in order to raise the level of corporate social responsibility. For those who should make up a company's board of directors, specific age limits should be established.



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