Gender and Age Heterogeneities and Corporate Social Responsibility Disclosure: A Study of Manufacturing Firms in Nigeria

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Abstract

There is rareness of empirical studies on the relationship between gender and age heterogeneities and corporate social responsibility disclosure, particularly for manufacturing firms in Nigeria. This study employs a disaggregated model in evaluating the relationship. Thus, this study seeks to assess the relationship between gender and age heterogeneities and corporate social responsibility disclosure. Data were gathered from thirty-eight (38) 48 listed manufacturing firms in Nigeria for the periods 2012-2020. The Wald statistics showed that while gender heterogeneity significantly and positively affects corporate social responsibility of the firm, age heterogeneity does not. The implication is that the more heterogeneous is the board the better is the corporate social responsibility disclosure of the firm. Given the findings of the study, it is recommended that there is need to encourage and have more women in the boardroom since they may have better understanding of certain market conditions than men; again, this would instil more creativity and quality in boardroom decision-making that could enhance corporate social responsibility. Finally, 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: Gender heterogeneity; Age heterogeneity; Corporate social responsibility disclosure, Manufacturing firms; Nigerian stock exchange

Introduction

Globally, there is a growing call among diverse stakeholders on the negative consequences of manufacturing firms' activities on the environment (Sánchez-Torné, Morán-Álvarez & Pérez-López, 2020; and Yu & Huo, 2019). Corporate social responsibility (CSR) has remained one of the dominant paradigms in the modern business world (Ding, Ferreira, & Wongchoti, 2014; Brammer, Jackson, & Matten, 2012; Jackson & Apostolakou, 2010) and its management is now considered a prerequisite for achieving strategic competiveness in the business landscape (Sánchez-Torné *et al*, 2020).

CSR refers to 'the integration of social and environmental concerns into firms' operations while paying attention to stakeholders' concerns' as well (Endrikat, Villiers, Guenther & Guenther, 2020). Currently, firms now pay significant attention to CSR by dedicating sections of their annual reports and accounts or corporate websites for reporting social and environmental issues (Ding *et al,* 2014). The objective of CSR according to Endrikat *et al* (2020) is geared towards disclosing corporate activities alongside social, environmental and community indicators.

CSR disclosure has become an integral part of businesses (Yarram & Adapa, 2020), providing vital information to stakeholders and the market (Mittelbach-Hörmanseder, Hummel, & Rammerstorfer, 2020). The benefits of CSR disclosure include a positive firm performance and reputation (Servaes & Tamayo, 2013); reduced idiosyncratic risks (Lee & Faff, 2009); and enhanced management competencies (Renneboog, Ter Horst & Zhang, 2008). CSR disclosure is presently regarded as a mirror into corporate activities and a link to financial performance (Pekovic & Vogt, 2020) which can enhance credit ratings (Jiraporn, Jiraporn, Boeprasert & Chang, 2014).

In the Nigerian context, CSR is also a burning issue, as several corporations are now pressured to take responsibility for the impact of their activities on the environment (Fodio & Oba, 2012). The Nigerian Stock Exchange (NSE) has continually reiterated its support for sustainability issues, which as a response, commenced a phased project to integrate sustainability reporting for the board, culminating in the production of Sustainability Disclosure Guidelines (SDG), covering environmental, social and governance (ESG) issues.

The board is the apex decision-making body in a corporation (Shaukat, Qiu & Trojanowski, 2016), and plays an important role in the governance of the corporation. The board is a vital mechanism in internal corporate governance of the corporation; the internal governance mechanism entails system of rules, practices and processes via which the corporation is directed and controlled (Ong & Djajadikerta, 2017). Boardroom heterogeneity has gained a widespread attention in the academic and accountancy literature at global and national levels (see Bassyouny, Abdelfattah & Tao, 2020; Cordeiro, Profumo & Tutore, 2020). Khatib, Abdullah, Elamer and Abueid (2020) see boardroom heterogeneity as heterogeneity among the members of boards in terms of age, gender, ethnicity, nationality, education, and experience.

Boardroom heterogeneity often leads to greater insights into markets, customers, employees and business opportunities, which translates to better corporate performance (Thomsen & Conyon, 2012). Prior studies have shown that boardroom heterogeneity has a positive impact on policy and decision-making (Hartmann & Carmenate, 2020) as well as CSR involvement (Beji, Yousfi, Loukil, & Omri, 2020; Garcia-Torea, Fernandez-Feijoo & de la Cuesta, 2016; Lau, Lu, & Liang, 2016; Walls, Berrone, & Phan, 2012). Thus, boardroom heterogeneity is one of the most vital dynamics signalling diverse dimensions of the board (Kang, Cheng, & Gray, 2007).

Recently, attention has magnified on the issue of boardroom heterogeneity and its consequent effect on CSR (Endrikat *et al,* 2020). In a survey by United Nations Global Compact-Accenture (2019), 94% of over 1,000 participating chief executive officers around the world agree that gender, and age and nationality heterogeneities play significant role in affecting CSR disclosure.

Furthermore, gender and age heterogeneities as they affect CSR disclosure has not received considerable attention in the accountancy literature, particularly for manufacturing firms listed on the Nigerian Stock Exchange. Regardless of the numerous empirical studies in this area in developed economies, researches are not forthcoming in the Nigerian context. It is against this backdrop, that this study seeks to examine the relationship between boardroom heterogeneity (gender and age heterogeneities) and CSR disclosure of listed manufacturing firms in Nigeria.

Theoretical Framework

The theoretical framework of this study is anchored on the stakeholder theory, which advocates the role of the firm in meeting the interests of diverse stakeholders. The stakeholder's theory was propounded and developed by Freeman in 1984 and draws from strategic management, corporate

planning, and systems theory to challenge a long-standing assumption 'that the prime objective of the firm is to maximize shareholders' wealth' (Laplume, Sonpar & Litz, 2008). According to Khatib *et al* (2020), stakeholder's theory posits a symbiotic connection between the firm and its external and internal shareholders' and the firm is dependent on such stakeholder satisfaction.

Stakeholders refer to individuals or groups who are affected by, or whose actions can directly or indirectly affect the firm's operations (Orlitzky, Louche, Gond & Chapple, 2017). Stakeholders entail employees, consumers, suppliers and related organizations, the local community and the general public. Stakeholder theory suggests that the firm has a binding fiduciary duty to diverse stakeholders' which ultimately determines how such a firm discloses issues relating to social and environmental issues (Ong *et al*, 2017).

A firm's objective is to optimize stakeholders' well-being in order to create strategic advantage (Laplume *et al*, 2008). In view of this, Freeman, Harrison, Wicks, Parmar and De-Colle (2010) posited that the basic objective of a firm is to create value for stakeholders, creates relationships among groups which have a stake in the business activities, and how customers, suppliers, employees, financiers (stockholders, bondholders, banks, or investors), communities, and managers interact.

The stakeholder theory intends to address three problems: value creation and trade, ethics of capitalism, and managerial mind-set (Freeman *et al*, 2010). The relevance of stakeholders' theory to gender and age heterogeneities and CSR is that stakeholders can take diverse attributes (gender and age) and that notwithstanding the attributes, the intent of management is to have their interests represented.

Conceptual Clarifications

Gender Heterogeneity

The role of women on the board has gained increased attention in the literature (Vinnicombe, Singh, Burke, Bilimoria & Huse, 2008). Gender heterogeneity refers to a mix of both male and female directors in the boardroom. Studies have shown that women are more sensitive to CSR issues (Webb, 2004). In particular, studies have linked women with traits such as empathy and affection as being interested in actualising values in relationships of great importance to the environment (Hanson & Mullis, 1985). The 2007 Catalyst census reports that women hold 14.8 per cent of the Fortune 500 board seats, a 5.2 per cent increase since 1995 (Catalyst, 2008).

Corporations with a high proportion of females on their boardroom exhibit better CSR disclosure capabilities (Walls, Berrone & Phan, 2012; Fodio & Oba, 2012; Rao, Tilt & Lester, 2012; and Post, Rahman & Rubow, 2011), and enjoy a superior reputation for environment (Kimball, Palmer & Marquis, 2012). A study by Bernardi, Bosco and Vassill (2006) revealed that the proportion of women in the board positively affects CSR disclosure. Similarly, Gordini and Rancati (2017); Lückerath-Rovers (2013) found a positive link between gender heterogeneity, CSR disclosure and financial performance of firms. This situation, in the views of Smith, Smith, and Verner (2006) may be attributed to a better understanding of particular market conditions by women than men, which may bring more creativity and quality to board decision-making.

Age Heterogeneity

Age heterogeneity refers to differences in age distribution among employees and broadly used to describe composition of the firm as a whole or composition of workgroups within the firm (Pytlovany & Truxillo, 2015). Age heterogeneity according to Wiersema and Bird (1993), affects

a person's background and personal experiences. The experiences influence attitudes and beliefs that contribute to the creation of a shared language among members of an age cohort (Rhodes, 1983). By contrast, age heterogeneity dissimilarity can result in major differences in beliefs and value system (Wagner, Pfeffer & O'Reilly, 1984), which in turn can affect the level of integration and cohesion within a group.

Extant literature presents mixed findings on the relationship between age heterogeneity and CSR disclosure. For instance, Mahadeo, Soobaroyen and Hanuman (2012) found no positive effect of age heterogeneity on CSR disclosure. Likewise, Randøy, Thomsen and Oxelheim (2006); and Engelen, van den Berg, and van der Laan (2012) found no significant effect in the relationship between age heterogeneity and CSR disclosure of firms in Scandinavian nations and Netherland. This means that age heterogeneity increases do not increase CSR disclosure.

Contrarily, Aguilera and Jackson (2010); and Post, Rahman, and Rubow (2011) found that age heterogeneity affects CSR disclosure. This view is supported by the fact that as directors get older, they become more sensitive to the society at large and more willing to contribute to the general welfare of the firm (Hafsi & Turgut, 2013). Also, younger directors are often seen as more sensitive to CSR issues as a matter of logic and principle. Such sensitivity leads to socially responsible and environmentally friendly behaviour, which tend to affect CSR disclosure (Bekiroglu, Erdil, & Alkpan, 2011).

Corporate Social Responsibility Disclosure

Corporate social responsibility (CSR) initiative was introduced by Sheldon (1924) in business literature. Since then, it has remained a dominant paradigm in the literature of business and strategic management. Friedman (1970) sees CSR as the conduct of business in accordance with shareholders' desires, which generally will be to make as much money as possible while conforming to the basic rules of society, both those embodied in law and those embodied in ethical custom.

Correspondingly, Wood (1991) refers to CSR as a configuration of principles of social obligation, processes of social responsiveness, policies, programs, and observable outcomes as they relate to the firm's societal relationships. The European Commission delineates CSR as firms acting voluntarily and beyond the law to achieve social and environmental objectives during the course of their business activities.

CSR disclosure can be seen as the disclosure of both qualitative and quantitative information on the social, environmental and economic impact of the firms' activities to pertinent stakeholders. The objective of which is to disclose corporate activities together with social, environmental and community concerns (Endrikat, Villiers, Guenther & Guenther, 2020). Weyzig (2009) identified three (3) major perspectives of CSR to include stakeholders, broad-objectives and neo-liberal perspectives. The first perspective observes that corporations have certain responsibilities toward their stakeholders and CSR is defined in negative terms (what a firm should not do); the second perspective demonstrates that CSR requires a proactive approach in order to promote sustainable development and this could be achieved via initiatives in areas where the firm can make valuable contributions; and the third perspective (neo-liberal) claims that the firm will create greater social welfare via the pursuit of its own objective of private profit, than by assuming other responsibilities.

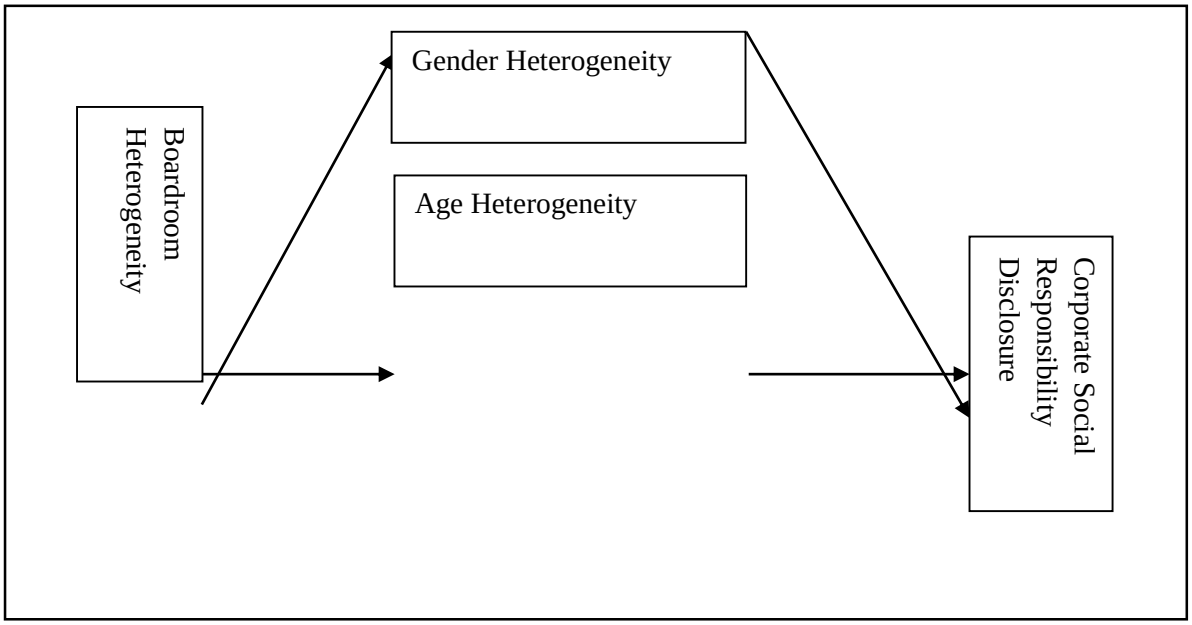

Figure 1: Schematic Representation of Conceptual Framework of the Study

Extant Studies

This section provides some recent empirical evidences on gender and age heterogeneities and corporate social responsibility (CSR) disclosure. Hartmann and Carmenate (2020) investigated the effect of gender heterogeneity on CSR reputation using a sample of 146 observations from 2013-2017. Secondary data were obtained from financial statements of the sampled firms. The results showed a significant positive relation between gender heterogeneity and CSR reputation scores.

Similarly, Jouber (2020) analysed the effect of gender heterogeneity on diverse components of CSR via a sample of 2,544 non-financial firms of 42 countries from 2013-2017. The Generalised Method of Moments results provide support for a positive effect of gender heterogeneity on CSR. Likewise, Bristy *et al* (2020) assessed the role of gender heterogeneity on CSR and financial performance nexus by means of 1,527 firms from 1996-2014. The two-stage least squares (2SLS) and generalised method of moment results showed that CSR decreases with the proportion of female directors in the board.

Beji *et al* (2020) examined the effect of gender heterogeneity on CSR via all listed firms in French stock exchange from 2003-2016. The multiple regression result showed that gender heterogeneity is positively associated with CSR. Again, Prudêncio *et al* (2020) evaluated the effect of gender heterogeneity in the board and CSR using a sample of 194 firms from 2016-2017. The multiple regression result showed a positive significant effect of gender heterogeneity on CSR. Remarkably, there are no recent studies that assessed the relationship between gender heterogeneity and CSR in Nigeria.

On the other hand, Rahman, Zahid, and Jehangir (2020) evaluated the effect of age heterogeneity on corporate performance of 360 non-financial listed firms from 2010-2014. The multiple regression results showed that directors' age had a significant positive effect on share price but non-significant effect on return on asset.

Musa, Gold and Aifuwa (2020) explored the effect of age heterogeneity on sustainability reporting of 13 industrial goods firms from 2014-2018. The panel least squares regression result indicated that board member age had a negative significant effect on sustainability reporting. Likewise, Liu and Zeng (2017) examined the relationship between age heterogeneity and CSR of 305 listed firms from 2010-2014. The ordinary least squares and two-stage least squares result revealed that age heterogeneity is negatively associated with CSR.

Research Methods

This study adopted the *ex-post facto* research design since the study seeks to establish variables that are connected with certain type of occurrence by analyzing past events of already existing conditions. Thus, the researchers had no control over the variables as the events already existed and could neither be manipulated nor changed. The established variables were measures of boardroom heterogeneities (gender and age) and CSR disclosure variable, which had already existed in the annual reports and accounts of the manufacturing firms investigated. Moreover, this design enabled the researchers explore the existing status of two or more variables at a given point in time and whether a relationship exists between them; hence most suited in establishing the effect of age and gender heterogeneities on CSR disclosure of firms in Nigeria.

The study population was publicly manufacturing firms in Nigeria; however, as at 31st December, 2020, there are forty-eight (48) listed manufacturing firms on the floor of the Nigerian Stock Exchange (NSE, 2020). To arrive at the study sample, a multi-stage sampling technique was adopted. The Taro-Yamane was employed in arriving at the actual sample size of forty-three (43) firms after which, only thirty-eight (38) were selected out of the forty-eight (48) firms. The reason for using only thirty-eight (38) firm was based on the nature and aggregate characteristics of manufacturing firms listed on the floor of the NSE and those that had disclosed the required dataset needed for this study. The sampled period covered 2012-2020 financial years; the period is chosen since it is the most recent financial period for which manufacturing firms had prepared audited accounts as at the time of the study.

The study used secondary data which were obtained from the annual reports and accounts of the manufacturing firms. The study builds on existing models of Katmon, Mohamad, Norwani and Al Farooque (2017); Cucari, Esposito De Falco and Orlando (2017); Ding and Kong, (2017); Harjoto, Laksmana & Lee (2015). In light of this, the empirical models are estimated as follows:

$$CSDI = F(gendhet) \qquad eq.1$$
$$CSDI = F(agehet) \qquad eq.2$$

Eqs. 1-2 capture the relationship between CSR and boardroom heterogeneity measures of age and gender. Given eqs.1-2, equations 3-4 were re-estimated in their explicit forms as follows:

$$CSRDI_{it} = \alpha_0 + \alpha_1 gendhet_{it} + \varepsilon_{it} \qquad eq.3$$
$$CSRDI_{it} = \alpha_0 + \alpha_1 agehet_{it} + \varepsilon_{it} \qquad eq.4$$

Where: *CSRDI* =Corporate social responsibility disclosure); *gendhet* = Gender heterogeneity; *agehet*=Age heterogeneity; α_0-α_7=Coefficients of regression*;* e=Error term*; i*=l, *t*=Time-frame.

Table 1: Measurement of Variables

S/N	Variables	Measurement
1	Corporate social responsibility disclosure	The average value of all social disclosure index (local community, social donations and gifting, employee training, health/safety, customer complaints disclosures)
2	Gender heterogeneity	The ratio of male and female directors to the number of total directors in the board; computed based on the Shannon and Blau index; (dummy 1,0) is computed as "1" for companies that have female directors and "0" if otherwise.
3	Age heterogeneity	The differences in age distribution among board members

Source: Compiled by the Researchers, 2021

Furthermore, the Shannon and Blau (1977) index of diversity in the boardroom was used to examine the effect of gender heterogeneity on CSR; the Blau index (1977) is given as:

$$1 - \sum_{i=1}^{n} P_i^2 \qquad \textit{Eq. 5}$$

P_i = Percentage of board members in each category, n = Number of categories. Blau index is a widely used diversity index to measure boardroom heterogeneity. The range of Blau index for gender heterogeneity is 0 to 0.5 which means the closer to 0, the less diverse; and the closer to 0.5, the more diverse. For instance, in this study, Shannon and Blau index of 1 implies that the board has the equal number of male and female directors in the board. The Shannon index (1948) is given as:

$$-\sum_{i=1}^{n} P_i \ln P_i \; ^{6} \qquad \textit{Eq. 6}$$

P_i = Percentage of board members in each category, n = Number of categories. The Shannon index is another widely used diversity index, but it is more sensitive to small changes. The minimum and maximum values of Shannon index for gender diversity are 0 and 0.69 respectively. For instance, zero male directors or zero female directors on board would yield a value of 0 and 0.69 would be resulted when both male and female directors have the same proportion on board.

Data obtained were analyzed in order of precedence – descriptive (mean, median, minimum and maximum values, standard deviation, kurtosis and skweness); pre-estimation test (correlation matrix); and post-estimation tests (variance inflation factor, Breusch-Pagan/Cook-Weisberg, ordinary least square, fixed and random effects regression and Hausman specification). A-priori expectations are that gender heterogeneity will positively affect CSR disclosure while age heterogeneity will negatively affect CSR disclosure.

Result of the Findings

Table 2: Descriptive Statistics of the Variables

Statistics	Corporate Social Responsibility Disclosure (csrdi)	Gender Heterogeneity (gendhet)	Age Heterogeneity (agehet)
Mean	.7291	.4509	8.1053
Median	.8000	0	7.5000
Maximum	1	1	12
Minimum	0	0	4
Standard Deviation	.2051	.2078	2.3176
Skewness	-1.0970	4.3845	.1909
Kurtosis	5.3652	2.224	1.8894

Source: Computed by Researchers, via STATA 13.0 software

Presented in Table 2 is the descriptive statistics of the dependent variable (corporate social responsibility disclosure –*csrdi*) and the independent variable (gender –*gendhet*and age –*agehet).* It can be observed that none of the variables exhibited negative average values (mean); this is expected, given the characteristics of the periods covered (2012-2020) and impact of improved disclosure requirements by listed manufacturing firms triggered by the International Financial Reporting Standards (IFRS).

Furthermore, the yearly standard deviations values range from .2051 (*csrdi*), .2078 (*gendhet*), and 2.32 (*agehet).* The yearly standard deviations values were not too dispersed from each other; an indication that the studied firms' boardroom heterogeneity and CSR measures are closely related in terms of their disclosures. Again, all panel data-series of *agehet* displayed non-zero skewness except *gendhet*. More so, all the variables (*agehet* and *gendhet*) were skewed to the right as indicated by the positive values attached to the coefficients.

In addition, all the variables have a normal distribution as indicated by the kurtosis values, which are not too far from three (3) (Gujarati, 2003); impliedly, the study variables are normally distributed. More importantly, the Shannon and Blau (1977) index of diversity in the boardroom, which was used in estimating gender heterogeneity lies within 0 to 0.5 (mean *gendhet* =0.4509); an indication that diversity in the boardroom are heterogeneously diverse.

Table 3: Correlation Matrix of the Variables

Statistics	Corporate Social Responsibility Disclosure (csrdi)	Gender Heterogeneity gendhet	Age Heterogeneity (agehet)
Csrdi	1.000		
Gendhet	0.174	1.000	
Agehet	-0.017	0.093	1.000

Source: Computed by Researchers, via STATA 13.0 software

The result in Table 3 suggests that correlation between CSR disclosure (*csrdi)* and gender heterogeneity (*gendhet)* is positive; *gendhet* moved together in similar directions with *csrdi* while age heterogeneity (*agehet)* moved in the opposite direction (negative) with *csrdi* as shown in the Pearson r values. A-priori expectations are that boardroom heterogeneity measure (gender) will positively relate with CSR while age will negatively relate with CSR.

The result of our study conforms to a-priori expectation. Besides, the Pearson coefficient did not exceed the maximum threshold of 0.8, as recommended by Gujarati (2003), suggesting the absence of multi-collinearity among pairs of independent variables of the study.

Table 4: Variance Inflation Factor Results of Variables

Variables	VIF	1/VIF
Agehet	1.10	0.9078
Gendhet	1.07	0.9333
Mean VIF	**1.09**	

Source: Computed by Researchers, via STATA 13.0 software

Table 4 showed that the mean VIF = 1.09, which is less than the accepted VIF value of 10.0; this suggests the absence of multi-collinearity problem in the empirical model of age and gender heterogeneities and CSR disclosure.

Table 5: Breusch-Pagan and Cook-Weisberg Results of Variables

Ho: Constant Variance	***Variables:*** Fitted values of csrdi
$Chi^2(1)$ = 35.10	Prob. > Chi^2 = 0.0000

Source: Computed by Researchers, via STATA 13.0 software

The Breusch-Pagan/Cook-Weisberg result in Table 4 showed that gender and age heterogeneities fit-well in the estimated models of corporate social responsibility(*csrdi*), since it is statistically significant at 0.05% level; a clear indication of the absence of heteroskedasticity problem in the empirical models of the study.

Table 6: Gender Heterogeneity and Corporate Social Responsibility

Dependent Variable: Corporate Social Responsibility (CSRDI)						
Estimator	***OLS***		***Fixed Effect***		***Random Effect***	
Variable	***Coef.***	***Prob.***	***Coef.***	***Prob.***	***Coef.***	***Prob.***
Gendhet	.1725*	0.000	.1637*	0.001	.1657*	0.001
	(3.43)		**(3.41)**		**(3.45)**	
R-Squared	0.0305					
R-Squared Adj.	0.0279					
Prob. F.	0.0007					
R-Squared (within)			0.0308		0.0308	
R-Squared (between)			0.2272		0.2272	
R-Squared (overall)			0.0305		0.0305	
Wald Ch2					11.88	
Prob. Ch2					0.0006*	
Hausman Test			Chi2(2) = 0.81		Prob>Chi2= 0.3696	

*Source: Computed by Researchers, via STATA 13.0 software; * significant at 1% level ** at 5% level Items in parentheses are t-ratios; gendhet = gender heterogeneity; csrdi = corporate social responsibility*

In model 1, we found that *gendhet* is highly significant at 1% level in explaining *csrdi*. The output of OLS indicates that *gendhet* has a larger beta coefficient in absolute terms than FE and RE. Beta value measures the degree to which the explanatory variable affects the dependent variables. Using the OLS and RE, the coefficient of *gendhet* is .1725 and .1657 respectively, implying that when publicly listed manufacturing firms' gender is heterogeneous, it will lead to approximately 17.25% change in their level of *csrdi*.

Besides, the beta coefficient for FE is .1637 but both FE and RE are significant at 5% levels. In the case of the coefficient of FE (.1637), it implies that when publicly listed manufacturing firms' gender is heterogeneous, it will lead to approximately 16.37% change in their level of *csrdi*. The t-tests of *gendet* are 3.43, 3.41 and 3.45 for OLS, FE and RE respectively. However, R^2 is 0.0308 for both FE and RE, which is higher than OLS. F-statistics is 11.79 with a probability value (p-value) of 0.0007 which is significant. This provides support that there is a positive relationship between gender heterogeneity and corporate social responsibility among listed manufacturing firms in Nigeria.

The results of Hausman specification tests are: Chi2(2) = 0.81 and p-value= 0.3696; this implies that Fixed Effect is more efficient than Random Effect (FE). Since Wald Ch^2-statistics is 11.88 with a probability value(p-value) of 0.0006, it implies that it is statistical significant. This implies that gender heterogeneity has significant and positive effect on corporate social responsibility of listed manufacturing firms in Nigeria.

Table 7: Age Heterogeneity and Corporate Social Responsibility

Dependent Variable: Corporate Social Responsibility (CSRDI)						
Estimator	***OLS (Obs.=378)***		***FE (Obs.=378)***		***RE (Obs. =378)***	
Variable	***Coef.***	***Prob.***	***Coef.***	***Prob.***	***Coef.***	***Prob.***
Agechet	-.0014	0.750	.-.0015	0.715	-.0015	0.720
	(-0.32)		**(-0.37)**		**(-0.36)**	
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 Researchers, via STATA 13.0 software; * significant at 1% level ** at 5% level Items in parentheses are t-ratios; agechet = age heterogeneity; csrdi = corporate social responsibility*

In model 2, we found that *agechet* is insignificant at 1% level in explaining *csrdi*. 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 *csrdi*. Besides, beta coefficient for FE is -.0015 but both FE and RE are insignificant at 5% levels. In the case of the coefficient of FE (-.0015), it implies that when listed manufacturing firm's boardroom age is heterogeneous, it will lead to approximately -0.15% change in their level of *csrdi*.

The t-tests of *agechet* are -0.32, -0.37 and -0.36 for OLS, FE and RE respectively; the t-test further confirms that *agechet* is insignificant in explaining *csrdi*. However, the R^2 is 0.0004 for both FE and RE and his higher than OLS. F-statistics is 0.10 with a probability value (p-value) of 0.7499 which is insignificant; this provides support that there is a negative and significant relationship between age heterogeneity and corporate social responsibility among selected listed manufacturing firms in Nigeria.

Furthermore, the results of Hausman specification tests are: Chi2(2)=0.02 and p-value= 0.8756; this means that Fixed Effect is more efficient than Random Effect. Given the Wald Ch2-statistics

is 0.02 with a probability value (p-value) of 0.8756, it suggests that there is insignificant effect of age heterogeneity on corporate social responsibility of listed manufacturing firms in Nigeria.

The result on gender heterogeneity earns the support of the findings Hartmann and Carmenate (2020); Prudêncio, *et al*, (2020); and Beji, *et al* (2020); this finding was supported by stakeholder theory. More so, the result showed that age heterogeneity has insignificant effect on corporate social responsibility disclosure. This result is supported by the findings of Musa, Gold, and Aifuwa (2020); and Liu and Zeng (2017) and not supported by stakeholders' theory.

Conclusion

There is dearth of empirical studies on the relationship between gender and age heterogeneities and corporate social responsibility disclosure in the manufacturing sector of Nigeria. Thus, most studies in this area had focussed on CSR and firm performance while there are others on corporate governance and CSR. Given the gap in literature, this study assessed the relationship between age and gender heterogeneities and corporate social responsibility disclosure of listed manufacturing firms in Nigeria during the period 2012-2020.

Given the analysis of data, the study concludes that while gender heterogeneity has significant effect on CSR, an insignificant effect was found for age heterogeneity. Additionally, given the outcome of ordinary least square, fixed and random effects tests, the study concludes that gender heterogeneity plays a fundamental role in influencing corporate social responsibility disclosure of listed manufacturing firms in Nigeria while age heterogeneity do not. The study contributes to the body of knowledge by establishing that while gender heterogeneity significantly affects CSR disclosure of listed manufacturing firms, age heterogeneity does not affect CSR disclosure of listed manufacturing firms in Nigeria.

Recommendations

On the basis of the findings, the following recommendations were proffered:

i. There is need to encourage and have more women in the boardroom because they may have better understanding of certain market conditions than men; again, this would instil more creativity and quality in boardroom decision-making that could enhance corporate social responsibility.

ii. 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.

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