CULTURE, MEDIA & FILM | RESEARCH ARTICLE

Effect of upper echelons’ demographic characteristics on earnings management in troubled non-listed companies in Nigeria

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Abstract: Research has shown that companies in a financial crisis are usually successful in hiding their poor performance through aggressive earnings management at the detriment of stakeholders like investors and loan providers. The wave of current bank loan defaults rocking the Nigerian banking system afforded a unique opportunity to study earnings management in troubled, non-listed companies in Nigeria to contribute to the attainment of the sustainability goal 9 on industrialization in developing countries. This study aimed at investigating the influence of top management’s demographic characteristics on corporate earnings management. Using Slovin’s 1960 sampling size formula, 80 non-listed companies were selected for the study from the list of 98 non-listed companies among the debtors of Assets Management Corporation of Nigeria (AMCON). Copies of a questionnaire were administered on 240 financial officers (3 participants per company). Descriptive statistics involved computation of percentages, means and standard deviations while hypotheses were tested with structural equation modelling using AMOS SPSS. Findings revealed a relatively high level of earnings management with significant positive relationships with age, tenure, educational level and gender of the CFOs.

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PUBLIC INTEREST STATEMENT

The wave of current bank loan defaulters rocking the Nigerian banking system afforded a unique opportunity to study the effect of upper echelons’ demographic characteristics on corporate earnings management in Nigeria. Primary data were obtained from the CFOs of troubled non-listed companies in Nigeria. Findings revealed a relatively high level of earnings management with significant positive relationships with age, tenure, educational level and gender of the CFOs. However, lower earnings management was observed among middle-aged, female, more educated and short-tenure CFOs. Thus grave consequences of fraudulent earnings management on stakeholders, such as loss of investments, loss of loan interest and principal, job loss, loss of tax incomes and the high unemployment rate may be averted by corporate appointment of more middle-aged, female and financial literate individuals into the upper echelons’ positions as well as by limiting the tenure of the upper echelons in the organizations to a moderate period of five to ten years.
Lower earnings management was observed among middle-aged, female, more educated and short-tenure CFOs. The study concludes that there is a positive significant relationship between upper echelons’ demographic characteristics and earnings management in troubled, non-listed companies in Nigeria. The study recommends the appointment of more middle-aged, female and financially literate individuals into the upper echelons’ positions with a moderate tenure of five to ten years to promote corporate sustainable development in Nigeria.

**Subjects:** Finance; Business, Management and Accounting; Industry & Industrial Studies; Developing Countries Studies; Corporate Financial Accounting and Reporting

**Keywords:** demographic characteristics; earnings management; corporate sustainable development; troubled companies; upper echelons theory

**JEL classification:** M41; M48

1. **Introduction**

Sustainable Development Goals (SDGs) are global agenda committed to people, the planet, peace, prosperity and partnerships. These SDGs were built on the successful experience gained from the eight Millennium Development Goals (MDGs). Sustainable development goal 9 (SDG 9) focuses on industry, innovation and infrastructure. The intent of SDG 9 is to encourage and stimulate the growth of small and medium scale industries for innovation and productivity, as well as job and wealth creation. Small and medium scale enterprises in Nigeria are predominantly non-listed companies. They constitute the bulk of the companies in the industrial sector of the economy and they are widely spread across the country. However, unethical accounting practices, like fraudulent earnings management, can pose threats to the attainment of this global developmental goal.

Earnings management has received considerable attention in recent years from academics, analysts and regulators due to the wave of corporate accounting misreporting across the globe which has cast doubts in the minds of stakeholders on reliability and credibility of financial statements. Within the last twenty years, several shocking corporate accounting misreporting occurred around the world. For instance, in 2002, Worldcom in the United States (US) inflated its assets by 11 billion dollars while in 2009, Satyam in India boosted its revenues by 1.5 billion dollars (Tutino & Merlo, 2019). Corporate failure of companies such as Dynergy and China Medical Technologies in 2012 and Banco Espirito Santo in 2014 might not be unconnected with fraudulent activities and financial irregularities. In Nigeria, Cadbury Nigeria Plc. overstated its assets by 13 billion naira and had to adjust its accounts to reflect an operating loss of 2 billion naira in the year 2005 (Chukwunedu & Okafor, 2011). More recently, the Security and Exchange Commission in the US investigated the aggressive accounting practices of General Electric in 2018 and the 22 billion dollars non-cash charge in connection with acquisitions came under the searchlight. Markmann and Ghani (2019) documented upward earnings management in General Electric which was revealed by positive discretionacry accrual behaviour. This empirical evidence may lend credence to the suspicion of fraudulent accounting practices in the company.

However, the primary objective of financial statements is to provide financial information about the reporting entity that is useful to investors and creditors in making decisions in their capacities as capital providers (Bhattacharyya, 2011). This primary objective will be defeated in an atmosphere where fraudulent earnings management thrives. Fraudulent earnings management may have grave consequences on stakeholders. Investors may record a huge loss on investments while creditors and lenders may be unable to recover the fund granted to the ailing companies. Suppliers may not be paid for the goods supplied while management and employees may face job insecurity and consequently job loss. The government, on the other hand, may have to bear losses in terms...
of a decrease in tax incomes and a high unemployment rate. Hence, research on earnings management behaviour of troubled companies should be of paramount interest to stakeholders.

Empirical research in top management as the primary decision-makers in business organizations has increased steadily in the past three decades. The pioneering work on this topic is the study of Hambrick and Mason (1984) that described organizational outcomes as the reflection of values and cognitive bases of powerful actors (the upper echelons) in an organization. These upper echelons include the chief executive officers (CEOs), the chief financial officers (CFO’s) and other Top Management Team (TMT) members. Among other variables, Hambrick (1990) identified age, gender, education and tenure as upper echelons’ demographic characteristics (UEDC) that could be explored to predict organizational outcomes like earnings management. CEOs and CFOs are two top directors that can exert much significant influence on corporate financial reporting. However, several studies (e.g. Dyreng et al., 2010; Ge et al., 2011; Ho et al., 2015; Ran et al., 2015; Schrand & Zechman, 2012; Troy et al., 2011) have examined the influence of CEOs’ characteristics on earnings management, possibly because of the domineering power of CEOs in an organization. On the other hand, relatively few studies (e.g. Barua et al., 2010; Liu, Wei et al., 2016) have investigated the impact of CFO’s attributes on earnings management despite the prominent position occupied by CFOs in corporate financial reporting. Consequently, more research is needed in this respect, most especially from developing economies. Hence, this study defined upper echelons, with a vast knowledge of corporate earnings management, as the CFOs and their equivalents.

Dutzi and Rausch (2016) observed that empirical research on earnings management behaviour of failing companies developed within the last ten years and remained scanty. Most of these studies emanated from developed economies (Campa & Camacho-Minano, 2014; Cornanic & Novak, 2015; Lisboa, 2016). However, a group of defaulters of deposit money banks in Nigeria affords a unique opportunity to study earnings management in troubled companies in Nigeria. It could be recalled that the Assets Management Corporation of Nigeria (AMCON) was set up in 2010 to acquire the banking sector’s non-performing loans. These non-performing loans were taken by corporate bodies and notable individuals. Since then, AMCON has taken over a series of such loans while the defaulters have become its debtors. As directed by the Central Bank of Nigeria (CBN), AMCON published the list of its chronic debtors in 2016, which was dominated by non-listed companies (AMCON, 2016). The published list consists of defaulters with a debt of N5 billion and above which constitutes the subjects of this study.

This study found that upper echelons’ demographic characteristics (age, gender, educational level and tenure) had a positive significant effect on earnings management with implications for the setting of suitable criteria for appointment of individuals into the top executive positions to promote corporate sustainable development. Our study has re-opened a less explored area in earnings management studies in Nigeria by providing evidence on the influence of top management’s attributes on earnings management in non-listed companies in Nigeria in contrast to prior studies that majorly focused on listed companies. The result of this study is a contribution to the validation of upper echelons theory in the study of earnings management from a developing economy.

2. Literature review and hypothesis development

2.1. Theoretical review

Earnings management studies have largely explored agency theory, positive accounting theory and signaling theory. However, contemporary studies that focused on the characteristics of top management that predispose to earnings management have popularized the use of upper echelons theory in earnings management studies. Upper echelons theory was founded on the premise that organizational outcomes are directly impacted by the knowledge, experiences and expertise of those
individuals occupying prominent managerial roles in the organization (Hambrick & Mason, 1984). The theory suggests that executives will make decisions that are consistent with their cognitive base, including values, cognitive models and personality factors (Hambrick & Mason, 1984) and executive orientation (Finkelstein & Hambrick, 1990). A fundamental principle of this theory is that observable experiences (i.e. demographic measures such as tenure, age, functional and educational background) are systematically related to the underlying cognitive orientations and knowledge base. In this theoretical framework, the organization becomes a reflection of its top executives, whereby the CEO functions as the central strategic decision-maker who can control the composition of the organization’s top strategy-making group. However, most of these studies used data from the United States (US). Studies that explored this theory outside the US are few (e.g Cheng et al., 2010; Choi et al., 2014; Ye, Zhang & Rezaee, 2010). Consequently, Plockinger et al. (2016) had called for future studies that would focus on manager-specific research designs and validate upper echelons predictions outside the US. Hence, the relationship between CFOs’ demographic characteristics and earnings management was investigated in this study by exploring the upper echelons theory.

2.2. Empirical review

Research on the influence of top management demographic characteristics on financial reporting choices has primarily focused on age, gender, education and experience. However, the literature provides mixed results on these studies. Isidro and Goncalves (2011) investigated the impact of managerial characteristics on earnings management of a sample of listed companies in Portugal for the fiscal years 2005 to 2009. Results indicated that older CEOs were more prone to managing earnings. Furthermore, Bamber et al. (2010) and Davidson et al. (2007) added that older CEOs have a higher tendency to manage earnings upward. Contrarily, Troy et al. (2011) argued that studies on executive age showed that older CEOs were less often involved in fraudulent actions which implied lower earnings management. Also, Xiong (2016) observed that companies with older chairmen managed earnings less. However, studies by Davis et al. (2015), Dyreng et al. (2010), Ge et al. (2011), Ran et al. (2015), Schrand and Zechman (2012), and Wang et al. (2017) did not reveal any observable age effect. Hence, the outcomes of this strand of research are contradictory and inconclusive.

Mixed results also trail the previous studies on gender and earnings management. Du et al. (2017) argued that when there is a proportional representation of female executives to male executives, earnings manipulation motivation would be significantly reduced. Ran et al. (2015), using hand-collected data, studied the relationship between personal characteristics of supervisory board members and the accounting information quality of companies in China. The results suggested that feminine gender was a consistent driver of improvements in accounting information quality in China. Xiong (2016) recorded lower absolute discretionary accruals and lower real earnings management in companies with female chairmen while Srinidhi et al. (2011) found a positive relationship between female directorship and quality of company’s financial information. Besides, Gavious et al. (2012) and Obigbemi et al. (2016) documented a negative relationship between female directorship and earnings management. Similarly, Wei and Xie (2010) found that male CFOs engaged more in earnings management than female CFOs. Conversely, Ye et al. (2010) and Zhang et al. (2010) did not find any significant difference in earnings quality of companies with female and male top executives.

The relationship between financial expertise and earnings management has also attracted research attention. Baatwah et al. (2015) examined the association between CEO financial expertise and audit report timeliness. The study found that CEOs with financial expertise are associated with timely audit reports which imply lower earnings management. Uwuigbe et al. (2014) observed that board with financial expertise was more effective in constraining earnings management in a sample of listed companies in Nigeria. Brochet and Welch (2011) and Xiong (2016) further advanced that companies with more educated chairmen engaged less in earnings management. Contrarily, Isidro and Goncalves (2011), Liu and Zhang (2014), Liu, Jiang et al. (2016), and Wang et al. (2017) observed
a positive significant relationship. Zouari et al. (2015) presented new evidence on the relationship between CEO expertise and earnings management by showing that expertise was associated with aggressive earnings management. Hence, it was observed that the empirical outcomes on the relationship between top management educational level and earnings management are inconclusive.

Nevertheless, Ali and Zhang (2015) and Choi et al. (2014) examined the association between CEOs’ tenure and earnings management. The outcome indicates that earnings are more likely to be overstated in the early years than in the later years of CEOs’ tenure. Conversely, Aier et al. (2005) examined the association between CFOs’ characteristics and accounting errors. The study found that the companies whose CFOs had more work experience were significantly less likely to restate their earnings. Also, Xiong (2016) noted that companies with long-tenured chairmen displayed lower earnings management. Hence, there is no consensus in the literature on the outcomes of the relationship between top management tenure and earnings management. Consequent upon these mixed results and geographical gap, we hypothesize that: “there is no significant relationship between upper echelons’ demographic characteristics (age, gender, educational level, and tenure) and earnings management in troubled, non-listed companies in Nigeria”.

3. Methods

3.1. Research design

The study adopted a descriptive research design. However, the survey method was explored because the study involved obtaining a subjective opinion of respondents on variables of interest to conclude on the entire population. It involved studying samples derived from the population using a structured questionnaire (Appendix A) as the research instrument because secondary data of non-listed companies in Nigeria are not readily available. The population of the study consists of 98 non-listed companies described as chronic AMCON debtors with debt of 5 billion naira and above. These debtors cut across all the sectors of the economy. The sample size was determined scientifically by exploring Yamane (1967) sampling size formula. The computation produced 79 non-listed companies as an adequate sample size for the study. However, 80 non-listed companies (Appendix B) were finally sampled to further enhance sufficient representation of the population of the study. The computation of the sample size is as shown below:

\[
n = \frac{N}{1 + Ne^2}
\]

Where: \(n = \text{Sample Size}; N = \text{Study Population}; e = \text{Significant Level}\)

\[
n = \frac{98}{1 + (98 \times 0.052)}
\]

\(n = 79 \text{ Companies}\)

Subsequently, a stratified sampling technique was adopted because there was a need to obtain a proportional sample of troubled, non-listed companies across all the sectors of the economy. This was followed by a simple random sampling technique by balloting to select samples from each sector.

3.2. Research participants’ recruitment

Primary data were collected by administering the structured questionnaire to the CFOs, Financial Officers (Final Accounts) and Financial Officers (Payroll) of each selected troubled, non-listed companies through referral approach. This approach was adopted to avoid resistance from the respondents that might be skeptical of giving information about their companies to an outsider. Section A contained CFOs’ demographic characteristics including age, gender, educational level and tenure. Section B comprised items involving changes in accounting methods and real operating activities explored
for earnings management purposes as adapted from the study of King (2015). The questionnaire administration was divided into four zones (Victoria Island, Ikeja, Apapa and Others) based on the location of the sampled companies. To start with, a senior partner in an audit firm auditing some of the companies sampled for the study, who is a close associate of the researcher, was contacted to serve as a link to the targeted respondents in the Ikeja zone. The respondents in the Ikeja zone provided the links to other respondents in the remaining zones earmarked for the study. Four (4) research assistants, youth corps, serving in some of the targeted companies were recruited for retrieval of the questionnaire. Follow-up was made by the researcher and the research assistants through phone calls and repeated visits to ensure a reasonable response rate. Out of two hundred and forty (240) copies of the questionnaire administered, two hundred and nineteen (219) copies were returned. Fifteen (15) copies were not filled and were excluded from data analysis. Hence two hundred and four (204) copies of the questionnaire were subsequently used for data analysis. Thus, a response rate of 85.00% was recorded.

3.3. Model specification
In this study, earnings management consists of two vector variables; changes in accounting method and real earnings management. This condition was put into consideration when formulating the model for the study. Hence, the model captured the effect of CFOs’ demographic characteristics on earning management from the combined data of changes in accounting methods and real earnings management. The model in the study of Wang et al. (2017) was adapted for the study.

Model:

\[
EM_{CAM\ REM} = \alpha_0 + \alpha_1AG + \alpha_2GENDER + \alpha_3EDU + \alpha_4TENURE + \epsilon
\]

Where: EM—Earnings management; CAM—Changes in accounting methods; REM—Real earnings management; AG—Age of the respondent; GENDER—Male or female CFO; EDU—Educational status of the respondent; TENURE—Years the respondent has spent on the post; \(\alpha_0\) Intercept; \(\alpha_1\), \(\alpha_2\), \(\alpha_3\), \(\alpha_4\) Coefficients and \(\epsilon\)—Error term

To determine the goodness of fit of the model, the criteria and indicators set by some notable scholars such as Bentler and Wu (2002) and Kaplan (2000) were strictly observed. Some of the indicators in determining the goodness of fit include the Normed Fit Index (NFI), the Goodness of fit (GFI), the Comparative Fit Index (CFI), and the Root Mean Squared Error of Approximation (RMSEA). The benchmarks for the model fit index are stated as follows: NFI = (>0.90); GFI = (≥ 0.90); CFI = (≥ 0.90); RMSEA = (≥ 0.05). The output of the model fit reveals that: NFI = 0.940, GFI = 0.921, CFI = 0.902, RMSEA = 0.46 and Chi-Square = 163.876. These results revealed that the minimum benchmarks were attained and indicate the goodness of fit of the model.

3.4. Variables’ measurement and procedure for data analysis
The survey instrument used to capture the changes in accounting methods and real earnings management in the study of King (2015) was adapted. Accounting adjustments and real operating activities aimed at managing earnings were subjected to a five-point Likert Scale rating: “Very Unlikely” = 1; “Unlikely” = 2; “Moderate” = 3; “Likely” = 4 and “Very Likely” = 5. The independent variables of interest are the CFOs’ demographic characteristics. These variables refer to the bio-data of the respondents. They include age in years, gender, level of education and tenure in years. Age was categorized into “Young CFOs” = “1”, Middle-aged CFOs = “2” and “Matured CFOs” = “3” (Kane, 2010). In relation to gender, “Male” = “2”, while “Female” = “1” (Xiong, 2016). Educational level was categorized into two: Non-possession of postgraduate degree = “1” and Possession of postgraduate degree = “2” (Wang et al., 2017) while tenure was categorized into “Short tenure” = “1” and “Long tenure” = “2” (Ali & Zhang, 2015). Data analysis includes descriptive statistics and hypotheses testing. Descriptive statistics involves the computation of percentages, means and standard deviation. The hypothesis was tested with structural equation modeling.
3.5. Validity and reliability tests

The validity and reliability of the research instrument were carried out by conducting confirmatory factor analysis (CFA) using AMOS SPSS. Measurement legend, earnings management proxied with changes in accounting method and real earnings management, were measured with ten items each. The benchmark for CFA loading as specified by Biggs et al. (2014) was strictly observed to ensure the validity and reliability of the items on the research instrument. It was discovered that the factor loadings exceeded a minimum of 0.70 benchmarks. Composite reliability and average variance extracted (AVE) of all the constructs were above 0.80 and 0.50 benchmarks respectively. The output of CFA analysis shows that factor loadings for all the ten items used for the measurement of the changes in accounting methods ranged between 0.878 and 0.977 (Appendix C1). Also, the output of CFA analysis shows that all the factor loadings for all the ten items used for the measurement of real earnings management ranged between 0.878 and 0.936 (Appendix C2). Since all the specified conditions and benchmarks for the assessment of convergent validity and composite reliability were met, the validity and reliability of the research measurement were confirmed.

4. Results

4.1. Descriptive statistics

Table 1 shows the age distribution of the respondents. The table reveals that out of 204 respondents, 40.7% are below 36 years (young CFOs), 21.6% of respondents are within the age bracket of 36–49 years (middle-aged CFOs) while 37.7% of respondents are 50 years and above (matured CFOs). This outcome implies that young, middle-aged and mature CFOs were fairly represented in the study. The table reveals that 55.9% of participants are male while 44.1% are female. The implication is that the study is gender-sensitive. The table shows the distribution of the

| Table 1. Descriptive statistics |
|---------------------------------|
| Indicators                      |  N  | %   | CAM (Mean/SD) | REM (Mean/SD) |
| **Age:**                        |     |     |                |               |
| Young CFOs (Below 36 years)     | 83  | 40.7| 2.8301 0.72068| 2.7699 0.77416|
| Middle-aged CFOs (36–49 years) | 44  | 21.6| 2.3818 0.68666| 2.3000 0.66630|
| Matured CFOs (50 years & above) | 77  | 37.7| 3.5805 0.80343| 3.5247 0.92261|
| Total                           | 204 | 100.0|               |               |
| **Gender:**                     |     |     |                |               |
| Male                            | 114 | 55.9| 3.7500 0.83843| 3.7018 0.85431|
| Female                          | 90  | 44.1| 2.0989 0.46676| 2.0756 0.53902|
| Total                           | 204 | 100.0|               |               |
| **Educational level:**          |     |     |                |               |
| CFOs without Postgraduate Degree| 97  | 47.5| 3.6526 0.83336| 3.7196 0.83861|
| CFOs with Postgraduate Degree   | 107 | 52.5| 1.9570 0.46264| 2.1385 0.49961|
| Total                           | 204 | 100.0|               |               |
| **Tenure:**                     |     |     |                |               |
| Short-tenure CFOs (Below 5 years)| 81  | 39.7| 2.2100 0.50864| 2.3728 0.56232|
| Long-tenure CFOs (≥5 years)     | 123 | 62.3| 3.5521 0.83094| 3.5396 0.85533|
| Total                           | 204 | 100.0|               |               |

Corporate Changes in Accounting Methods (CAM): Mean = 3.7120; SD = 0.8376
Corporate Real Earnings Management (REM): Mean = 3.9103; SD = 0.95906
Earnings Management (EM): Mean = 3.8112; SD = 0.89837
respondents by educational status; 47.5% of respondents do not have a postgraduate degree in financial related disciplines while 52.5% have a postgraduate degree. Thus, financial expertise was adequately captured in the study. The results also show that 39.7% of respondents across the selected sectors have spent less than five (5) years (short tenure) while 62.3% of respondents have spent over 5 years (long tenure) in their roles as CFOs. This outcome reveals that both short and long tenure CFOs were fairly included in the study.

Table 1 also reveals the summary of a descriptive overview of responses on corporate changes in accounting methods across the age, gender, educational level and tenure of office of the respondents. It was noted that the rate of corporate changes in accounting methods to manage earnings was lowest among the middle-aged CFOs (Mean = 2.3818, SD = 0.68666), moderate among young CFOs (Mean = 2.8301, SD = 0.72068) but highest among matured CFOs (Mean = 3.5808, SD = 0.80343). This outcome implies that the inclusion of more middle-aged individuals among the upper echelons in an organization has the potential for higher financial reporting quality. Putting gender into consideration, female CFOs were found to be less engaged in the corporate accounting manipulation (Mean = 2.0989, SD = 0.46676) while male CFOs were found to be more engaged in the manipulation (Mean = 3.7500, SD = 0.83843). Thus, appointing more female individuals into the upper echelons’ circle in an organization may promote higher financial reporting quality. However, the corporate financial reporting manipulation was low among CFOs with a postgraduate degree (Mean = 1.9570, SD = 0.46264) while it was high among CFOs without a postgraduate degree (Mean = 3.6526, SD = 0.83336). This finding suggests that possession of a postgraduate degree in financial related disciplines exposes the CFOs to the implications of earnings management on the organizations. Moreover, CFOs with short tenure of office was found to be less engaged in corporate accounting manipulation through changes in accounting methods (Mean = 2.2100, SD = 0.50864) while CFOs with long tenure engaged more in this earnings management technique (Mean = 3.5521, SD = 0.83094). This result suggests that upper echelons’ tenure of office should not be longer than necessary to guarantee higher corporate financial reporting quality. Higher financial reporting quality can boost investors’ confidence to provide more capital for the business which may subsequently promote corporate sustainable development.

Table 1 further shows the summary of a descriptive overview of responses on corporate real earnings management across the age, gender, educational level and tenure of office of the respondents. In a similar manner, it was observed that corporate real earnings management was lowest among the middle-aged CFOs (Mean = 2.3000, SD = 0.66630), moderate among young CFOs (Mean = 2.7699, SD = 0.77416) but highest among matured CFOs (Mean = 3.5247, SD = 0.92261). This outcome suggests that the inclusion of more middle-aged individuals among the upper echelons in an organization has implications for lower real earnings management. Concerning gender, female CFOs were found to be less engaged in real earnings management (Mean = 2.0756, SD = 0.53902) while corporate real earnings management was found to be high among male CFOs (Mean = 3.7018, SD = 0.85431). Thus, higher financial reporting quality may be aided by appointing more female individuals into the upper echelons in an organization. Moreover, corporate real earnings management was low among CFOs with postgraduate degree (Mean = 2.1385, SD = 0.49961) while it was high among CFOs without postgraduate degree (Mean = 3.7196, SD = 0.83861). This finding suggests that possession of a postgraduate degree in financial related disciplines exposes the CFOs to the implications of real earnings management on the organizations. Besides, CFOs with short tenure of office was found to be less engaged in corporate real earnings management (Mean = 2.3728, SD = 0.56232) while CFOs with long tenure engaged more in real earnings management (Mean = 3.5396, SD = 0.85533). This result suggests that to maintain higher corporate financial reporting quality, upper echelons’ tenure of office should be moderate. However, on average, all the ten (10) items assessing changes in accounting
methods, real earnings management and earnings management respectively, as shown in Table 1, had mean scores of 3.7120, 3.9103 and 3.8112 respectively. These findings suggest high earnings management in the sampled companies.

5. Survey study (2019)

5.1. Test of hypothesis

To test the hypothesis of the study, structural equation modeling was explored. Structural coefficients and standardized estimates were depicted in Figure 1 and Table 2 respectively. Figure 1 reveals that 45% of the variation in earnings management can be explained by the demographic characteristics ($R^2 = 0.45$). The structural coefficients indicate that tenure has the highest positive significant effect on earnings management ($\beta = 0.41$). The educational level also has a significant positive effect on earnings management ($\beta = 0.34$). Earnings management was also significantly influenced by the age of the CFOs ($\beta = 0.17$). The gender of the CFOs exerted the least influence on earnings management ($\beta = 0.16$). These outcomes imply that when tenure, educational level, age and gender of the CFOs move up by 1 standard deviation, earnings management will go up by 0.41, 0.34, 0.17 and 0.16 units respectively.

Furthermore, Table 2 shows the standardized regression estimates of the model. It was observed that tenure ($\beta = 0.412$, $p < 0.01$), educational level ($\beta = 0.345$, $p < 0.01$), age ($\beta = 0.166$, $p < 0.05$) and gender ($\beta = 0.156$, $p < 0.05$) exerted positive, significant effects on
earnings management in that order. The implication of this is that when tenure, educational level, age and gender go up by 1 standard deviation, earnings management will go up by 0.412, 0.345, 0.166 and 0.156 units respectively. Consequently, the null hypothesis was rejected while the alternate hypothesis was accepted. Therefore, it can be concluded that upper echelons’ demographic characteristics have a positive significant effect on earnings management in troubled, non-listed companies in Nigeria.

5.2. Discussion
Concerning the research hypothesis, the study sought to provide evidence on the extent of the effect of the upper echelon’s demographic characteristics on corporate earnings management. Four (4) demographic variables were examined in the study. The structural coefficients revealed that all the four demographic variables (age, tenure, educational level and gender) have a positive significant relationship with earnings management. In other words, a unit increase in each of these variables will lead to an increase in earnings management. In comparison with previous studies, the findings of this study are consistent with that of Bamber et al. (2010) and Zouari et al. (2015) which noted that manager-specific characteristics have significant positive relationships with financial reporting outcomes.

This study found that the age of the CFOs exerts a positive significant effect on earnings management. Further findings revealed that corporate changes in accounting methods and real earnings management were lowest among the middle-aged CFOs; moderate among young CFOs but highest among matured CFOs. The outcomes imply that the inclusion of more middle-age individuals among the upper echelons in an organization has the potential for higher financial reporting quality which can boost the public image of the organization. This result aligned with the study of Isidro and Goncalves (2011) that older CEOs were more prone to managing earnings. However, this finding is contrary to the studies of Dyreng et al. (2010), Ran et al. (2015), Schrand and Zechman (2012), and Davis et al. (2015) that did not reveal any observable age effect.

Our study posited that gender has a significant positive relationship with earnings management. However, female CFOs were found to be less engaged in the corporate changes in accounting methods and real earnings management than male CFOs. Thus, appointing more female individuals into the upper echelons in an organization may promote higher financial reporting quality which can potentiate the reputation of the organization. Studies of Barua et al. (2010), Gaviouss et al. (2012), Srinidhi et al. (2011), Bala and Kumai (2015), and Wei and Xie (2010) were all in support of this outcome. Barua et al. (2010) revealed that companies with female CFOs reported better accrual quality which implies lower earnings management. Gaviouss et al. (2012) recorded a negative relationship between the presence of female directors on the board and earnings management. Also, Gaviouss et al. (2012) observed that an increase in the proportion of females in the board of directors reduces the company’s earnings manipulation and thereby enhances the quality of accounting information. Bala and Kumai (2015) advanced that women’s directorship was positively and significantly related to earnings management. Wei and Xie (2010) found that male CFOs engaged more in earnings management than female CFOs. Contrarily, the studies of Zhang et al. (2010) and Ye et al. (2010) found that gender did not have a significant influence on earnings quality.

The results of this study also reveal that CFOs’ tenure exerts a significant positive effect on earnings management. Moreover, CFOs with short tenure of office was found to be less engaged in the corporate change of accounting methods and real earnings management than CFOs with a long tenure of office. This result suggests that upper echelons’ tenure of office should not be longer than necessary for maintaining higher corporate financial reporting quality that can earn the organization the confidence of the stakeholders. The support for this observation was gained from the study of Lewis et al. (2014) which found that the likelihood of voluntary information
Disclosure decreased with CEO tenure. Further support was derived from Ali and Zhang (2015) that CEOs were more likely to overstate earnings in their early and final years of tenure, which were often decisive for reputation building and performance-based retirement plans. However, Hazarika et al. (2012) held a contrary view that CFOs with higher tenure are less often involved in restatements.

The output of the structural equation model shows that CFOs' educational level has a positive significant effect on earnings management. This outcome is consistent with the studies of Liu and Zhang (2014), Liu, Jiang, et al. (2016) and Wang et al. (2017). That is, possession of an advanced degree in accounting or other financial related disciplines has a positive significant effect on earnings management. A possible reason for this outcome might be that the acquisition of advanced knowledge in financial accounting has exposed the financial managers to sophisticated techniques that could be explored to manage earnings to present a better picture of the financial performance of the firm. However, the studies of Baatwah et al. (2015), Baik et al. (2011), and Brochet and Welch (2011) noted a negative relationship that could be premised on the awareness of the regulatory implications of earnings management on the firm and the managers. Moreover, the study observed a low rate of the corporate changes in accounting methods and real earnings management among CFOs with a postgraduate degree while it was high among CFOs without a postgraduate degree. This finding suggests that possession of a postgraduate degree in financial related disciplines exposes the CFOs to the implications of earnings management on the organizations. In a nut-shell, having more middle-age, female and financially literate individuals as upper echelons in an organization, with moderate tenure of five to ten years, can potentiate higher financial reporting quality. This can boost the corporate image and in turn enhance the growth and sustainability of the company by securing stakeholders' confidence and attracting more capital into the business.

6. Conclusion and recommendations

This study examined the effect of upper echelon's demographic characteristics on earnings management in troubled, non-listed companies in Nigeria towards contributing to the attainment of SDG 9 on sustainable industrialization in developing countries. The study revealed a significant positive relationship between earnings management and CFOs' demographic characteristics. Therefore, it can be concluded that the demographic characteristics of the CFOs in the sampled companies have a significant effect on financial reporting choices and corporate earnings management. Having established a high possibility of corporate earnings management with its long-run effect on the survival and sustainability of the sampled companies; the study recommends the appointment of more middle-aged, female and financially literate individuals into the upper echelons positions in the organizations. Moderate tenure of five to ten years is also recommended for the individuals occupying the upper echelons' positions. This study considered only CFOs as respondents, future studies may include other upper echelons in the organizations which include board chairmen, audit committee chairmen, and CEOs. Also the focus of this study was on chronic AMCON debtors, other troubled companies such as delisted companies and bankrupt companies may be subjects of future studies.

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Appendix A. Sample Questionnaire

Consent: Do you wish to participate voluntarily in this research work? Yes [ ] No [ ]

Section A: Managerial Demographic Profile

Instructions: Please tick () the option that correctly depict your choice.

(1) Age: Below 36 years [1] 36–49 years [2] 50 years and above [3]
(2) Gender: Male [1] Female [2]
(3) Highest Educational Qualification: First Degree/Equivalent [1] Postgraduate Degree [2]
(4) Tenure: Below 5 years [1] 5 years and Above [2]

Section B: Corporate Earnings Management

Instructions: Please tick () the option that correctly depict your choice.

(5) To what extent do you agree that your firm would make the following accounting adjustments/choices to boost reported earnings given that each adjustment is in compliance with financial reporting regulations?

| S/N | Item                                                   | SA  | SD |
|-----|--------------------------------------------------------|-----|----|
| a   | Modify bad debt expense projections                     | 1   | 2  |
| b   | Adjust obsolescence estimates for inventories           | 1   | 2  |
| c   | Alter assets depreciation policy                        | 1   | 2  |
| d   | Refine impairment measurement policy                    | 1   | 2  |
| e   | Change estimates for deferred tax                       | 1   | 2  |
| f   | Modify valuation of retirement plan liabilities        | 1   | 2  |
| g   | Change property, plant and equipment valuation model    | 1   | 2  |
| h   | Change financial assets valuation model                 | 1   | 2  |
| i   | Change goodwill valuation model                        | 1   | 2  |
| j   | Change software cost valuation model                   | 1   | 2  |

(6) To what extent would your firm carry out the following real operating activities to boost reported earnings, given that each activity is in compliance with financial reporting regulations?

| S/N | Item                                                       | Very Unlikely | Very Likely |
|-----|------------------------------------------------------------|---------------|-------------|
| a   | Ease payment terms                                         | 1             | 2 3 4 5     |
| b   | Offer price discount to attract more sales                 | 1             | 2 3 4 5     |
| c   | Cut maintenance expenditures                               | 1             | 2 3 4 5     |
| d   | Cut research and development expenditures                 | 1             | 2 3 4 5     |
| e   | Cut advertising expenditures                               | 1             | 2 3 4 5     |
| f   | Cut employees training budget                              | 1             | 2 3 4 5     |
| g   | Cut travel and entertainment budget                        | 1             | 2 3 4 5     |
| h   | Postpone new project                                       | 1             | 2 3 4 5     |
| i   | Increase production to lower cost of goods produced        | 1             | 2 3 4 5     |
| j   | Dispose old non-current assets                            | 1             | 2 3 4 5     |
### Appendix B. List of sampled companies

| Alminnur Resources Limited | Abasa Nigeria Enterprises Ltd. | Brila Energy Limited |
|----------------------------|--------------------------------|----------------------|
| Ofada Veeetee Rice Ltd     | Lawal Obelawo Plastic Ind.     | Inter. Oilfield Services Ltd |
| Zarm Poultry and Feedmills | Pakat Nigeria Limited          | Grand Petro—Chemical Co. |
| Global Haulage Resources   | Tradjek Nigeria Limited        | Sanki Surojo Petroleum Ltd. |
| Jag Global Resources       | Gateway Portland Cement        | Sunshine Oil and Chem. Dev. |
| Ayokunle Farms & Ind. Ltd. | Gramet Group                   | Crystal Dynamics Energy Ltd |
| Osigwe Foods & Agro Ind    | Dwc Drilling Limited           | Nimex Petroleum Limited |
| Tuns Farms Nig Ltd.        | Charlesco (WA) Ltd.           | Nacol International Limited |
| Workson Int. Ltd.          | Street Fleet Inv. Ltd.         | Capital Oil & Gas Ind. Ltd. |
| Global Formwork Nig. Ltd.  | Resort International Limited   | Tanzila Petroleum Ltd |
| Hosanna Properties Ltd.    | Aframan Enterprises Nig. Ltd.  | Extra Oil Limited |
| Roygate Properties         | Genprogetti Nig. Ltd.          | Beracah Lubrications Nig. Ltd |
| Woobs Resources Limited    | Eres N V (Nig) Ltd             | Petroleum Brokers Limited |
| Rangk Ltd                  | Cinca Nigeria Limited          | Mofas Shipping Line, Nig. Ltd |
| Sharon Properties Ltd.     | Centence Savings & Loans Ltd   | Victoria Continental Inter. |
| Index Dev. Company Ltd.    | Reliance Telecom Ltd.          | Timbuktu Media Limited |
| Claremount Management Ltd. | Avian Specfrantage Comm.       | Ajoke Stores Limited |
| Venus Construction Company | Sammy Beth Interbiz Limited   | Somerset Energy Services Ltd |
| Covenant Apartment Compl.  | Cityscape International Ltd    | Continental Aviation Services |
| Kraggar Investments Ltd.   | VIVA wireless Ltd.             | Al-Kahf Motorcycle Company |
| Ena-Bell Limited           | Lorna Global Resources Ltd.    | Timbuktu Media Limited |
| Linkers Nigeria Limited    | Ziklagasis Network Ltd         | Resort International Ltd |
| Home Trust Savings         | Shoreline Power Company        | Suru World Wide Ventures |
| Lexacap Partners           | Suffolk Petroleum              | Hotel De Island |
| Anyiam Osigwe Ltd          | Seawolf Oilfield Services      | Geedee Zulu Investment Co. |
| Arcturus Merchant Trust Ltd| Goldust Investment Co. Ltd.    |                      |

Source: AMCON (2016); Bloomberg website; Official websites of the Sampled Companies
### Appendix C1. Confirmatory factor analysis (Changes in Accounting Methods)

| Indicators | Loading | Indicator Reliability | Error Variance | Composite Reliability | AVE | Cronbach’s Alpha | No. of Indicators |
|------------|---------|-----------------------|-----------------|-----------------------|-----|-----------------|------------------|
| Change of Accounting Methods (CAM) | 0.9803 | 0.8327 | 0.900 | 10 |
| CAM1 | 0.914 | 0.8354 | 0.1646 |
| CAM2 | 0.892 | 0.7957 | 0.2043 |
| CAM3 | 0.888 | 0.7885 | 0.2115 |
| CAM4 | 0.887 | 0.7868 | 0.2132 |
| CAM5 | 0.921 | 0.8482 | 0.1518 |
| CAM6 | 0.956 | 0.9139 | 0.0861 |
| CAM7 | 0.916 | 0.8391 | 0.1609 |
| CAM8 | 0.878 | 0.7709 | 0.2291 |
| CAM9 | 0.977 | 0.9545 | 0.0455 |
| CAM10 | 0.891 | 0.7939 | 0.2061 |

Source: Field Survey, (2019)
Appendix C2. Confirmatory factor analysis (Real Earnings Management)

| Indicators | Loading | Indicator Reliability | Error Variance | Composite Reliability | AVE | Cronbach’s Alpha | No. of Indicators |
|------------|---------|-----------------------|----------------|-----------------------|-----|------------------|------------------|
| Real Earnings Management (REM) | 0.9768 | 0.8080 | 0.909 | 10 |
| REM1 | 0.909 | 0.8263 | 0.1737 |
| REM2 | 0.894 | 0.7992 | 0.2008 |
| REM3 | 0.878 | 0.7709 | 0.2291 |
| REM4 | 0.889 | 0.7903 | 0.2097 |
| REM5 | 0.889 | 0.7903 | 0.2097 |
| REM6 | 0.912 | 0.8317 | 0.1683 |
| REM7 | 0.897 | 0.8046 | 0.1954 |
| REM8 | 0.891 | 0.7939 | 0.2061 |
| REM9 | 0.893 | 0.7974 | 0.2026 |
| REM10 | 0.936 | 0.8761 | 0.1239 |

Source: Field Survey, (2019)
